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A

TREATISE

ON

STRICTURE OF THE URETHRA;

DESIGNED AS

A MANUAL

FOR THE

TREATMENT OF THAT COMPLAINT;

AND ADDRESSED CHIEFLY TO

STUDENTS AND JUNIOR PRACTITIONERS.

By GEORGE MACILWAIN,

MEMBER OF THE ROYAL COLLEGE OF SURGEONS, SURGEON TO THE FINSBURY DISPENSARY, MEMBER OF THE MEDICO-CHIRURGICAL SOCIETY OF LONDON; AND LATE SURGEON TO THE CITY OF LONDON TRUSS SOCIETY.

Ne quid nimis.

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TO

JOHN ABERNETHY, ESQ. F.R.S.

SURGEON TO ST. BARTHOLOMEW'S HOSPITAL, &c. &c. &c.

AS A SMALL TRIBUTE OF GRATITUDE

FOR HIS SUCCESSFUL ENDEAVOURS IN PROMOTING THE SCIENTIFIC

AS WELL AS THE HONOURABLE PRACTICE OF AN

ARDUOUS PROFESSION,

THIS LITTLE BOOK

IS, BY PERMISSION,

RESPECTFULLY DEDICATED,

BY HIS OBLIGED AND GRATEFUL PUPIL,

GEORGE MACILWAIN.

36, *Ely Place*,
March 4, 1824.

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PREFACE.

I CANNOT suffer this little treatise to appear before the public, without its being accompanied by a brief account of those views which led to its publication. Any surgeon acquainted with the works which have been published on Stricture of the Urethra, will perceive that the authors generally recommend one kind of treatment, to the virtual exclusion of all others: now the variety which exists in the nature of strictures, does not admit of the exclusive adoption of any one mode of practice; and, as this circumstance was productive of much annoyance to myself when I commenced practice, I endeavoured by attentive observation to ascertain the particular class of cases to which one or other kind of treatment was especially applicable. Private practice, however, in general affords too limited a field of observation for the correction or

establishment of conceived opinions. On being appointed Surgeon to the Finsbury Dispensary, and to the City of London Truss Society,—where many of the applicants are afflicted with diseases of their urinary organs,—my opportunities of observation were as extensive as I could possibly desire. This led me to establish in my own mind the truth of some opinions, and (I freely confess) to correct others which were erroneous. The general result, however, convinced me that an attempt to point out the particular practice which was suited to the different kinds of cases would be useful; and this is the object of the present treatise. I am fully aware of the difficulty of doing this in a clear, much less a perfect manner: the experience, however, which I have had, leads me to hope that my views will be found practically correct; and I wish the reader to bear in mind, that my object is not the promulgation of any thing new, but the proper application of that which is already known. I have endeavoured to render the book as small as possible, since the size and expense of professional

works very much abridge their utility. In doing this, I have been obliged to omit many things; and thus it may happen that what I have considered judicious curtailments, may by some be regarded as omissions. I trust, however, that every thing necessary to be known will be found in its proper place. I have not thought it necessary to add a large number of cases: if the practice here recommended be good, and warranted by correct views of the disease, it requires no enumeration of successful results to lead to its adoption; if, on the contrary, it be injudicious or inefficient, a volume filled with cases would not ensure its establishment. The anatomy of the parts has been omitted, because to have given this complete would have materially increased the size of the book; and it is so perfectly taught in the schools, that its addition was considered to be unnecessary. Should I find that this is deemed an omission, I can only say, that should there ever be a second edition, it shall be then subjoined; and in such a form that it may be procured separately. I may observe, that I do not pretend to instruct those who like

myself have had opportunities of consulting the book of nature; wherefore I address myself chiefly to students and junior practitioners. Should any of my elder brethren peruse the work, it will certainly be interesting to know whether their experience has led them to form corresponding opinions. If, however, the book render the treatment of strictures less arduous to the student, or if it be found to contain what is useful in connexion with stricture in a smaller compass than other works, my object will be fully accomplished. With regard to style, I am fully aware that I have need of some claim to the indulgence of the reader.

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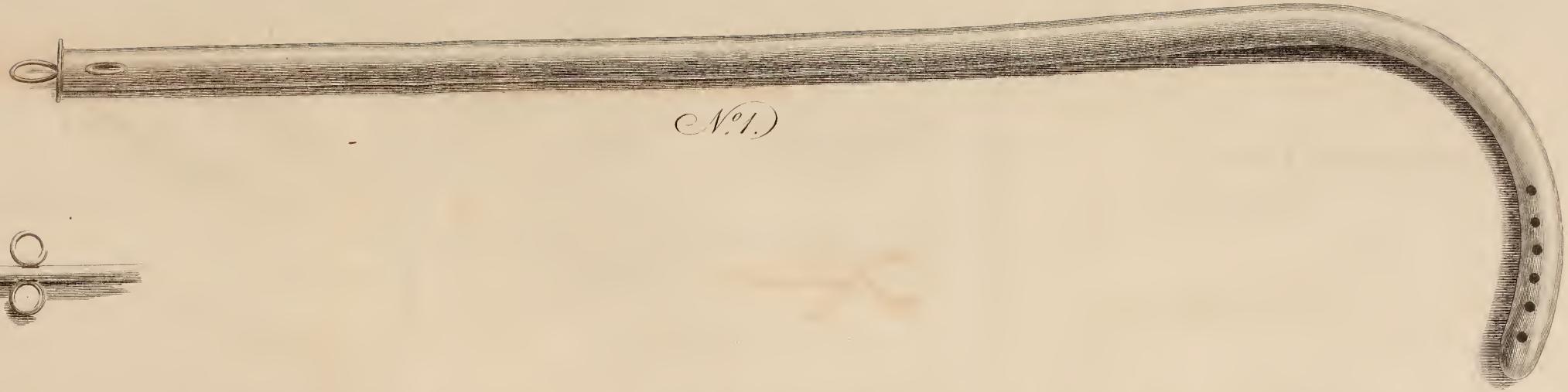
Fig. 3.—Is intended to represent the diameter of the largest Catheter I usually employ in the treatment of Stricture. It scarcely gives a correct idea, however, of the full size of the instrument. Both Fig. 2 and 3 represent also the precise form of the curved portion of the instrument.



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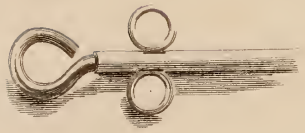

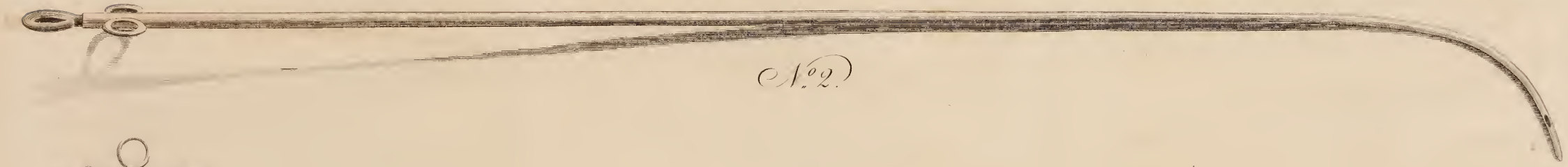

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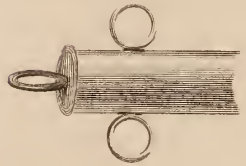

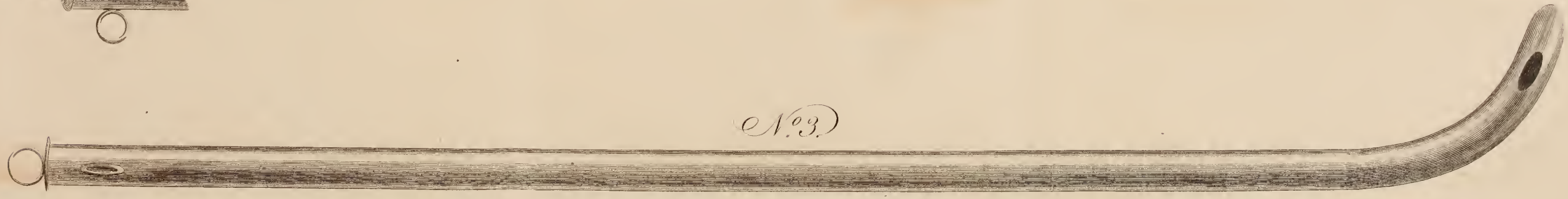

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A MANUAL,

ETC. ETC.

CHAPTER I.

OF STRICTURES OF THE URETHRA IN GENERAL.

WHETHER strictures are considered with reference to the frequency of their occurrence, the occasional difficulty experienced in effecting their removal, or the sufferings they produce, it must be admitted, that there is no complaint which more strongly demands the study of the surgeon.

It is the object of this Chapter to consider the different situations of strictures, the causes giving rise to them, and the kind and degree of alteration of structure by which they are accompanied.

Every part of the urethra, except its prostatic portion, is liable to become contracted by this disease; but it occurs more frequently in some situations than others. In no situation, however, are strictures more frequently found than in the membranous portion, and especially in that part of it which is immediately posterior to the bulb; they

also very commonly occur immediately anterior to this commencement of the corpus spongiosum. From this point forward every part is liable to contraction, but not equally. The three inches next to the bulb are more frequently affected than the remaining portion, and the external orifice is but seldom the seat of stricture, where however it does occasionally occur. It is stated in some books that strictures frequently happen at the bulb: if by this we are to understand that part of the urethra actually covered by the posterior extremity of the corpus spongiosum, I confess my experience has led me to think differently. That the urethra does become narrower at this part, must be admitted, but by no means, I think, so frequently as has been represented.

There is a considerable variety in the form and extent of strictures. There may be a simple narrowing of a part of the canal, as if a ligature had been thrown around it: the opening by which its different portions communicate being in the centre, or the contraction being irregular, the opening may be placed superiorly, inferiorly, or laterally. In general, the narrowing is limited to a line or two in length; but in some cases it extends much farther, the canal having a continuous diminution in its calibre for an inch or more: and again, there are instances in which the whole tube, from its membranous portion forwards, has become lessened in its diameter. Sometimes there is a sort of bridle thrown across

the urethra; and the impression, in a case of this kind, which is made on a soft bougie, resembles that which would be produced by drawing a piece of fine twine across its point. I have met with several cases of this kind; and if it be not frequently observed in dissection, I should be disposed to account for it by the appearance being, in all probability, destroyed in slitting open the urethra. It does not appear, however, to have escaped the observation of the accurate Morgagni, who speaks* of having found "fibres and fleshy fibrillæ in the urethra."

The change which the mucous membrane undergoes consists of a greater or less thickening. In some instances it proceeds so far, that no similarity with its healthy condition is discoverable, appearing almost of a cartilaginous texture, whilst in others scarcely any change can be observed; and there are degrees of alteration intermediate between these extremes. Where the contraction is considerable, and the membrane but little altered, there is a thickening produced by deposition exterior to it. The change of structure is generally proportionate with the duration of the complaint; and if this has been very long, the whole of the urinary organs usually become more or less diseased.

No age is positively exempt from stricture; it may be said, however, to occur more frequently after forty than antecedent to that period: it is true that many patients become thus afflicted long before

* Vide Lib. xlii. Sec. 41, et seq.

even thirty, but this does not invalidate the general position above stated. Some difficulty, it must be confessed, occurs in settling this point definitively, in consequence of its being often impossible to ascertain exactly how many years a stricture may have existed before the surgeon is consulted for its removal.

An elaborate description of the causes of stricture would require a division of them into those which operate by a direct and indirect agency; but in order that the enumeration of them may be as concise as is consistent with clearness, it may be said, that any circumstance capable of producing violent or continued irritation in the urethra, will produce stricture; and it will be found on examination that all the causes enumerated by authors, or observed in practice, are to be referred to one or other of these phenomena. The urethra has a complexity of function—its sympathies are numerous—it affords an illustration of the contiguous, continuous, and remote sympathy, as described by Mr. Hunter. Hence, when the remote and proximate causes of its diseases are considered, the catalogue becomes very extensive.

Peculiarity of constitution predisposes some individuals to stricture; although it is but seldom that we can trace it as unequivocally resulting from this idiosyncrasy, independent of the intervention of local excitement, for reasons which obviously present themselves on considering the functions of the

generative organs. As no part of the body is exempt from the influence of general constitutional disorder, so may the urethra become the seat of its local development. In the present state of science it is not necessary to enforce the truth of this proposition by any laboured reasoning. The effects frequently produced by stimulating or other substances taken into the stomach, on the urethra, in persons who have stricture, as well as in those who have not, are objects of familiar observation. The least deviation from their ordinary mode of living will, in some individuals, induce irritation in the urethra or bladder, where there is no evidence of disease in these organs. Further, all cases of stricture are invariably relieved by a moderate and rational diet, and the symptoms uniformly aggravated by a contrary line of conduct. A volume might be filled with facts and arguments leading to the same conclusion; but at this day it would be a work of supererogation. Habitual abuse of wine or ardent spirits will induce stricture; but, whether by an influence directed to the health in general, or to the urinary organs in particular, it is difficult to determine. There is no cause to which strictures are so frequently referred as gonorrhœa; but whether it exerts so extensive an influence in their production as is generally supposed, may be fairly questioned. Stricture often takes place at a period very remote from the existence of any affection of this kind, and in patients who never had gonorrhœa in their lives, as

also at an age which must be altogether exempt from the agency of such a cause. I shall not pursue this subject further, as Mr. Hunter's book contains facts and observations which any candid man must consider as conclusively establishing the fact, that gonorrhœa is only to be considered in common with other causes, though perhaps more frequent than many others. Injections no doubt give rise to stricture; but I cannot agree with Sir Everard Home to relinquish their employment, because the ill consequences which have sometimes followed it I believe to be referable to their having been injudiciously administered. The experience of Mr. Hunter showed that strictures occurred as frequently after gonorrhœa treated without injections as with them; I could readily believe much more frequently, and for the following reason.

Diligent investigation shows that stricture does not commonly proceed from violent inflammation, but from a sort of irritation, moderate but continued, principally characterized by a morbid increase of sensibility, sometimes attended by discharge. Thus it is found that where stricture can be traced to gonorrhœa, the latter has been neglected, and the irritation, of which the discharge is sufficient evidence, unnecessarily protracted; during which period the patient is liable to sources of excitement which he is wearied with foregoing. No state can be more favourable to the formation of stricture than that to which I have just referred. Injections,

therefore, when properly employed, by removing the irritation and discharge, so far from conducing to the occurrence of stricture, become actually indirect preventives of this disease. The consideration of gonorrhœa would lead to a digression; I shall therefore merely mention the principles to which it is necessary to attend in the employment of injections. First, they should never be used whilst there is pain in micturition; 2dly, their quality should never be of such a nature as to produce more than a temporary smarting; 3dly, their strength should be increased as the canal becomes less susceptible; and, lastly, their action should be confined to the seat of the disease. Immoderate indulgence in sexual intercourse is with propriety considered as a cause of stricture. It is obvious that the continued irritation and excitement to which the organs are thereby subjected, must be very favourable to its production. Calculus in the bladder, enlargements of the prostate, and affections of the rectum, are occasional causes of stricture.

Of the two first it has been said, that the urethra is never naturally distended, and that stricture happens in consequence of the canal gradually adapting itself to such circumstances. I do not believe that this is the *modus agendi;* since, if it were, the canal should become contracted throughout. It appears more rational to attribute it to the sympathetic irritation to which the parts are constantly exposed; and when strictures form anteriorly to one which has

existed some time previous, it is probable that they owe their origin to the influence of the same principle. The causes hitherto mentioned operate by a continued irritating influence. Violent irritation, without being continued, will also produce stricture, as is shown by cases where it supervenes after wounds or other injuries of the parts concerned. It may be observed generally, that strictures are preceded by a peculiar state of the canal, the detection of which will lead to the prevention of their occurrence. The condition to which I allude, is the "Irritable Urethra," the symptoms and treatment of which will be next considered. In concluding this Section I would observe, that as the facts enumerated influence the mode of treatment, they should be constantly borne in recollection.

CHAPTER II.

OF IRRITABLE URETHRA.

It has been stated in the preceding Chapter, that, for the most part, strictures are preceded by a peculiar state of the canal denominated Irritable Urethra; wherefore it is obvious that the causes giving rise to both maladies will be similar. The urethra, however, may labour for a considerable period under this affection before contraction takes place in any part of it, of which I have seen repeated examples. The morbid sensibility which is its principal feature may affect the whole canal, or be confined to one portion of it; in which latter case it is almost invariably situated in that part enveloped by the prostate gland. As the treatment usually includes the occasional introduction of instruments, it may at first appear unnecessary to attempt any other diagnosis than these are capable of affording. But when we consider, first, the great and in many cases the insuperable objection made by patients to the introduction of instruments; 2dly, the difficulty of making them understand how their introduction can be necessary where there is no stricture; and, 3dly, that some cases admit of relief without their

employment—the diagnosis becomes important: and although it is confessedly obscure, yet I believe, in many cases, it is to a discriminating practitioner sufficient to enable him to distinguish the two maladies. First, then, with reference to the volume of the stream in micturition. Persons with irritable urethra will occasionally make an exceedingly small stream, yet at other times it shall be of the natural size: now, although in stricture its volume varies considerably at different periods, yet it is never to the same extent; attentive inquiry showing it always to be less than natural. Again; we find also that the diminution has progressively become more considerable, which is not the case in simply irritable urethra. It is by no means uncommon to find patients making water in a full stream after a meal, although previous to this it was exceedingly small, and the urethra so irritable as to give a feeling of strangury—a difference which never happens to the same extent in stricture. Involuntary emissions* are occasionally attendant on stricture, but they are scarce-

* I have seen very many cases tending to establish this point. This morning I had occasion to examine the urethra of a patient who consulted me a few days since for symptoms which rendered him confident that he had stricture. On his informing me, that since he had employed the measures recommended to subdue the irritation, his stream had been on some occasions as large as natural, I recollected that he had not complained of involuntary emissions. On making an inquiry as to this point, he said that he was very frequently troubled with their occurrence. Examination detected a highly sensitive prostatic urethra, but no stricture.

ly to be considered as a common symptom; whereas in simply irritable urethra nothing can be more frequent: and I am the more confident that this difference exists, from finding that they are sometimes described as a symptom of stricture occurring at an early period of the disease.* Where these are a leading symptom, the irritation is frequently confined to the prostatic portion, but not invariably, as I have seen examples of the contrary. As far as my observation goes, a greater or less disorder of the general health usually accompanies this affection, whereas in stricture it is frequently by no means so easily discoverable; it would seem as if this farther development of disease had rendered the character of it more local, except indeed where the symptoms have made such progress as to react on the general health in their turn. Irritable urethra, besides giving rise to symptoms somewhat analogous to those of ordinary stricture, will sometimes induce others, which may be considered as the occasional attendants on that complaint. The former we need not mention at present. By the latter, I mean abscess in perinæo, painful enlargement of the testicle, and hydrocele. The extensive opportunities afforded me by the City of London Truss Society, where a great many patients apply with hydrocele, under the impression that they have hernia, induced me to examine the urethra in this

* Howship on the Urinary Organs.

complaint generally; but I cannot say, although the number examined altogether was considerable, that I could establish any very satisfactory or useful conclusion. In some few I have found stricture—in others irritable urethra; but in many, neither of these affections could fairly be said to exist. I can therefore only mention its co-existence with these complaints, as an occasional occurrence, with which most surgeons are already well acquainted. I have seen one case which leads me to think, that even organic disease of the testis may result from the condition of the canal of which I am now speaking, when its influence is exerted on a disordered constitution. It was a man who applied to me with a large lobulated swelling in the situation of the left testicle. Although not very painful, its external character (being hard in some places and soft in others) induced me to think it of no very benign nature. The state of the man's health, the large size of the tumour, its close proximity to an inguinal hernia on the same side, together with irritation and slight enlargement of the glands in the groin, forbad its removal. Having symptoms of irritation in the urethra, it was examined and found to be very sensitive. The occasional introduction of bougies was accordingly had recourse to, and their employment was followed by a diminution in the tumour too apparent to be mistaken. The relief was, however, but of short duration; the tumour again increased, and he gradually sunk, and died.

The preparation is in the museum of my friend Mr. Langstaff, to whom I gave a more detailed account of the case. The structure of the tumour does not admit of description, except that in some parts it presented an appearance similar to medullary sarcoma.* In the treatment of irritable urethra it should be observed, that there are some cases in which change of air and attention to the general health are alone necessary, and others in which nothing else will relieve the symptoms. In general, however, the treatment consists in the introduction of instruments directed by a principle not altogether previously unknown in surgery, but first applied to the urethra, as I believe, by Mr. Abernethy, to whom the Public and the Profession are otherwise so much indebted. This consists in diminishing the morbid sensibility of the canal, by habituating it to the mechanical stimulus of an instrument, on the same principle as we do ulcers to the chemical influence of our common stimulating applications. We should commence by an instrument calculated to produce the least irritation, and increase this in proportion to the diminishing susceptibility of the urethra. No instrument should be introduced until those measures have been employed which should precede the introduction of instruments generally, for which I refer the reader to the treatment of stricture. When we have employed those for a

* Mr. Langstaff considers it a true specimen of this disaese.

few days or a week, a well-made highly polished elastic gum instrument, enclosing a fine wire, should be introduced, and repeated at intervals, longer or shorter in proportion to the improving state of the urethra. In general, once a-week will be sufficiently often, except towards the conclusion, when it may be done twice during that period with advantage; and as metallic instruments generally produce more irritation than those of elastic gum, they may at the same time be substituted for those of the latter description. As a small instrument is difficult to introduce, produces more irritation, and gives us no information of the real condition of the canal, should there be stricture, their use is to be avoided; yet it is not advisable in this case to employ one of the full size, because it will produce too much irritation for our present purpose, the canal not being capable in this condition of submitting to the natural distention of its sides, which, if it be forced, will be productive of an increase rather than a diminution of irritation. I generally commence with No. 10, increasing its size at every subsequent introduction. In some cases (notwithstanding the employment of measures recommended previously) we cannot introduce an instrument on the first trial, by reason of the excessive irritation it produces; but we always succeed on the second or third attempt, for although the bougie may have only passed through a portion of the canal, its presence there will in a degree relieve the irritability of the whole. On the

first and second visit, the instrument should only be allowed to remain in the canal for a few seconds; its residence there being gradually prolonged, so that at last it may be allowed to remain a few minutes with advantage. Rest will very much facilitate the favourable progress of these cases. I have, in general, however, had patients whose avocations denied them this advantage; I never, however, neglect enjoining it where circumstances admit of their compliance. If motion should be found prohibitory of improvement, the bougie may be introduced the last thing at night, when the individual will often be enabled to resume his ordinary avocations in the morning with impunity. Throughout the whole treatment, those measures which are either directly or indirectly calculated to relieve irritation in the parts concerned, should be rigorously enforced, and which will be mentioned in connexion with the treatment of stricture. With regard to hydrocele, enlargement of the testicle, and abscess in perinæo, their treatment will be mentioned after that of stricture, as it differs not in principle, whether occurring from one or other affection. As I have been obliged to allude to the introduction of instruments, it is expedient to describe the mode in which this is to be accomplished in the next place.

CHAPTER III.

ON THE INTRODUCTION OF INSTRUMENTS IN GENERAL.

On first consideration, nothing would appear more more easy than the introduction of an instrument into the bladder, provided, first, that it were accommodated to the curve of the urethra; secondly, that the canal proved to be of the usual size; or, thirdly, if it were narrower than usual, we employed an instrument of a proportionate diameter. A very little experience, however, convinces us that a strict adherence to other rules is necessary, even where the canal is comparatively healthy; and that if there be stricture, the difficulty is frequently so considerably increased, as without certain manipulations to prove insuperable. We very commonly hear of surgeons who are or have been particularly successful in operations of this nature. Dessault is known to have been very expert in these cases; and I recollect, when in Paris, to have heard that the surgeon of the Hôpital de la Maison Militare du Roi, was particularly happy in his mode of introducing catheters, having very seldom failed. I am, I confess, far from attributing these instances of flattering result to any superior knowledge of the anatomy of

the parts in the individuals concerned: with this every student can easily render himself familiar: yet I have often experienced the utility of certain manœuvres, which difficulties in practice suggest, and which the success attending their application leads us to remember and appreciate. Some of these will come under our notice. Instruments are introduced under very different circumstances; but there are a few rules generally applicable to the direction of our choice, which should be adhered to. Whatever be the composition of the instrument, its form should be cylindrical; since, if it be conical, and its passage be obstructed, we are at a loss to know if the obstacle impede the point or whether this may not have passed a stricture which is not capable of admitting its increasing diameter. An elastic gum bougie should never be employed without a wire in its centre, or some other contrivance to give it a certain fixity of form; without this it is impossible to have a complete knowledge of, and control over the direction of its point, on account of the tendency of the instrument to straighten itself in its progress through the canal. It is essential that the surgeon should be able to vary the direction of its extremity even to ensure the evasion of natural obstacles. Suppose, for instance, it should hitch in the pouch of the verumontanum, how can we otherwise make it traverse the upper part of the urethra, which is often an essential condition to its introduction? If the elastic gum catheter is employed, care

should be taken that its stilette be sufficiently large to effect the same purpose. Sir Everard Home speaks of patients who felt the wire in the instrument; I have never noticed this circumstance, but can easily imagine it possible if the wire were not contained in the centre of the bougie, or if the catheter were thinner in some parts than in others: if, however, the instrument is well made, it seems somewhat inexplicable, since the urethra is not capable of making scarcely the least impression on instruments of this composition. Gum catheters are often sold in the shops, with the stilettes so small, as to be scarcely of any use, which is worse than having none at all; since, in the latter case, the conviction that we cannot control the direction of the point, prevents us from using any force capable of doing mischief. As the course of the urethra is curved, such should be the curve of the instrument. The degree of curvature in common bougies, or even in those of elastic gum with wire, is not very material, since neither instrument is absolutely unyielding, the last two inches being of most consequence, where it should be moderately bent. In metallic instruments it is more particularly desirable, however, that the curve should correspond to that of the urethra. The form which is generally given to them approximates more or less to that recommended by Dessault, forming the segment of a circle, six inches in diameter; or that employed by Sabatier, the curvature of which represented the segment of a circle,

seven inches in diameter. Mr. Stanley, however, adapting the catheter to the natural curve of the canal, employs an instrument altogether straight, except within about two inches of its point, where it is bent as represented in the plate. I recollect seeing M. Larrey introduce a catheter still less curved even than Mr. Stanley's, which he said he had used for many years. There is no doubt that a person accustomed to introduce instruments, may employ them of various curvatures; indeed, I have done it myself, but confess I prefer that recommended by Mr. Stanley, to all others.* I have never found any so easy of introduction; or any which conveyed to the operator so clear a conviction of the exact part of the urethra through which it was passing. The larger the instrument which the particular circumstances of the case will allow of, the less is the difficulty of its introduction. Practitioners have often been contending with imaginary strictures from using small instruments. Of this I have seen many cases; one gentleman, who consulted me for another complaint, wished me also to attend to his stricture, which he said had existed some time. He had been under the care of another practitioner, who had passed several times a bougie (No. 6) a consider-

* Occasionally we meet with a case, where a curve somewhat different from that here recommended passes more easily. It may be possible that the course of the urethra is not precisely the same in every individual. Such cases, however, are rare.

able distance down the urethra; but he had not reached the bladder, and the patient found himself but little relieved: to this account he added his symptoms, which induced me to examine his urethra. It was certainly irritable, but I succeeded without much difficulty in passing a full-sized elastic bougie into his bladder. There can be little doubt that the former bougie had hitched in some of the lacunæ, since the irritability did not seem sufficient to account for the failure in its introduction. All instruments should be held lightly in the hand, as we then recognise with greater accuracy the degree of any impediment opposed to their progress; and no greater force should ever be employed, than is necessary to effect a gentle pressure against the obstacle. The position of the patient is also of consequence: it is immaterial, indeed, whether he is sitting, standing, or lying down; but it is very necessary to assure ourselves that there is no pressure in the perineum, either by his clothes, if standing, or by any bed-clothes, if lying. It is also of consequence that the pelvis should be placed perfectly horizontal. The penis should be placed between the thumb and fore-finger of the left hand, whilst the instrument is gently introduced with the right. It is immaterial whether we commence with its concavity or convexity towards the abdomen; I generally commence with it in the latter direction. Having passed the orifice, I press the instrument gently onwards, turning it gradually as it proceeds, in such a manner,

that when it arrives at the bulb its concavity is upwards. I turn it in this way from having observed that the lacunæ are thus more readily avoided, keeping the point as much as possible to the lower and lateral parts of the canal. On reaching the bulb, the handle should be depressed as the instrument proceeds, when it will usually enter the bladder. The obstacles which impede the passage of instruments, may be divided into those which result from the natural structure of the parts, and those which are the consequences of disease. For the sake of brevity, I shall consider together the means by which they are to be overcome, or avoided. When any obstacle is encountered, the instrument should be gently pressed against it, for a few seconds or a minute; if we are unable to proceed, it should be withdrawn to the extent of an inch, and again gently pressed forwards, its point being directed to the lower or lateral parts of the canal, to avoid the lacunæ, one of which it may have entered, and which lie chiefly on its dorsal surface. If this does not succeed, we may suspect that the opening through the contracted part is not central, but that its situation may be superior, inferior, or lateral; therefore, the direction of the instrument should be varied accordingly. Sometimes, when the extremity of the instrument has entered the stricture, it is so closely held there that its further progress is arrested; in which case, giving it a gently rotatory motion will often overcome the impediment. This mode is

recommended by the French authors. Mere irritability will often obstruct an instrument; and where the methods already mentioned have failed, I have frequently succeeded by allowing it to remain in the urethra a few minutes, and then it has passed on without difficulty. On some occasions I have succeeded by the following manœuvres:—

Where patients have been much alarmed, I have told them that I would wait a few minutes, withdrawing the instrument about an inch at the same time, and observing accurately the extent to which I have done so; I have then engaged them in conversation on subjects foreign to their complaint, and in a few seconds, suddenly, but not forcibly, pressed on the instrument, which has then passed the situation of the former obstruction. A difficulty, not unfrequently experienced by young practitioners, results from the handle of the instrument being depressed too soon, in which case its point presses against the arch of the pubes; the mere recollection of this circumstance is sufficient to enable the surgeon to avoid such an obstacle. Instruments of considerable size often meet an impediment in the pouch formed by the verumontanum, which in general will admit a bougie (of No. 6.) This I have seen the source of much embarrassment where the operator did not immediately recollect the anatomy of the parts; and as it constitutes an obstruction where stricture is never found, it cannot be too strongly impressed on the mind of the student. To

avoid this obstacle, the operator should raise both the instrument and penis towards the abdomen, and keeping the point of the former to the upper surface of the canal, should depress them together. The consideration of enlarged prostate may appear foreign to the object of this treatise, yet in connexion with the introduction of instruments it is necessary to mention it, as well as the means by which the impediment it offers is to be avoided. This impediment is in general easily recognised; first, by its occurrence in the situation where stricture never occurs; secondly, by examination in the rectum; and further, by its seldom occurring except at advanced periods of life. It may happen that the third lobe of the prostate is alone enlarged, in which case the situation of the obstruction would be the only circumstance by which its nature could be ascertained. In a patient with enlarged prostate whom I visited in the country, I succeeded in introducing a silver catheter, formed as recommended by Mr. Stanley. It is however better, when you are properly provided with elastic instruments, to increase the curve and lengthen it at the same time, in conformity with those changes which the course and length of the canal undergo in such cases:* here also the point of the instrument should be kept in

* The curve figured in the plate is that represented by the urethra in a preparation possessed by Mr. Stanley; whose liberality on this, as on many other occasions, I feel happy in thus publicly acknowledging.

close proximity with the upper surface of the urethra; this is much facilitated by pressure against the perineum or in the rectum. The expedient suggested by Mr. Hey, however, often succeeds where every thing else fails; it consists in nothing more than withdrawing the stilette to the extent of about two inches, and then gently urging on the catheter. The effect this produces is to raise the point of the instrument very considerably, and thus allow it to pass over the projection. It is here especially requisite that the stilette should fit the catheter, as the curve formed by its partial removal is then much increased. I cannot conclude this section without strongly inculcating the necessity of avoiding undue force under any circumstances. It is inconceivable how small a degree of force is capable of rupturing the membrane of the urethra. Many preparations in this metropolis present lasting and melancholy memorials of the unskilfulness of surgeons on this point. In some specimens which I have seen, there are false passages of various lengths and directions; and, in one instance, I have seen a passage made directly through nearly the whole length of the left corpus cavernosum. The caution here indicated applies with additional force to the employment of metallic or other unyielding instruments. When it is recollected how numerous are the occasions on which surgeons are called to introduce instruments under circumstances of difficulty, I feel confident that the prolixity with which these rules

may have been laid down will be excused. No written instructions can communicate that superiority of tact, or impart that availing confidence, which is the result of experience alone; nevertheless, if the operator bear thoroughly in mind the anatomy of the parts, if the methods here attempted to be explained be carefully observed, if the introduction of the instrument be attempted at proper periods and under as favourable auspices as the urgency of the circumstances may admit, he will seldom be foiled in the accomplishment of his object.

CHAPTER IV.

OF THE SYMPTOMS OF STRICTURE.

THERE is a considerable variety in the symptoms of stricture in different individuals. In the first place, many of them may be absolutely wanting; secondly, where they all exist they may vary in severity; and thirdly, there are cases in which, although there is much difference in the degree of rapidity which marks their progress, the symptoms do eventually acquire the same general character. These varieties may no doubt be influenced by a correspondent variety of causes, but in the majority of cases they will be better explained by the usual habits of the patients. There are cases, however, which do not admit of this explanation; but whose peculiarities must be referred to an idiosyncrasy in the individual which is difficult to define. Notwithstanding what has been just observed, the symptoms are sufficiently uniform to allow of my describing them, first, as they generally occur, and then adding what may be considered as greater or less exceptions to the general rule. The accounts which patients usually give on their first application, is the following: they complain of having for a considerable time experienced some

difficulty in micturition, that of late it has been more frequent, and that the volume of the stream has become considerably diminished. Although minute inquiry generally informs us that the stricture has been of some standing, and in some instances has existed for years, yet it may happen that it is only a few months or a year since the patient's attention has been directed to the disease. This is very intelligible; for, in conformity with what we observe in other parts of the body, the bladder has a power of accommodating itself to a change of circumstances. Its strength, for a long time, may increase so correctly in proportion to the increase of the obstacle which opposes the ejection of its contents, that a very considerable period elapses before the difficulty in making water becomes cognizable to the patient, or it occasions an annoyance so trifling as scarcely to excite his attention. This increase of strength in the bladder frequently renders the formation of stricture so insidious, that the urethra at the affected part is very narrow before the individual is aware of the existence of any contraction whatever: the bladder, however, at length becomes unable to empty itself, and the abdominal muscles and diaphragm powerfully act as coadjutors, so that each effort to make water is accompanied by a straining which is very distressing, and the complete evacuation of the bladder is often not accomplished even by these combined forces, as we frequently discover by the immediately subsequent

introduction of instruments. The straining which accompanies stricture, and which seems necessary to evacuate the bladder, although it is occasionally exceedingly annoying to the patient at the time, is more important with reference to the results which are its consequence. I am firmly of opinion that there are a great number of patients labouring under hernia, which has been produced by no other cause. I must confess, that I had seen a great number of instances of stricture in ruptured patients, before I drew any inference from the observation of their co-existence. A case of retention of urine, however, induced me to pay particular attention to this point. The individual laboured under the usual symptom of that complaint; and when his sufferings were relieved by the evacuation of the bladder, he immediately requested information as to the nature of a tumour in his groin, which examination showed to be a small inguinal hernia. On endeavouring to ascertain how long this had existed, the man was perfectly clear that it was only subsequent to the attack of retention of urine. Indeed, any person at all accustomed to the manipulation of herniæ, would have felt no hesitation in pronouncing this, independent of any collateral evidence, to be one of very recent occurrence. The circumstances of the case, however, recalled to my memory many others in which hernia and stricture were combined: subsequent observation has shown me many more, and has led

to the opinion which I have just expressed. As the straining, however, varies considerably in its degree, and in many cases is so trifling as to render a man very sceptical of its influence in producing hernia, I was particularly inquisitive in my subsequent inquiries as to this symptom: in every case I found it very considerable; and as the hernia was not traced by the individuals in question to any extraordinary exertion, I feel warranted in considering it as resulting from the symptom which I am now considering. At the same time, of course, I am fully aware, that these complaints may easily co-exist without either having the least influence in the production of the other. As I do not immediately recollect having heard this effect of the straining in stricture particularly insisted on, I am prepared for a difference of opinion; and this I can readily understand, since the opportunities which practitioners in general have of examining hernia are comparatively limited — I say comparatively, because, during the time that I held the appointment of surgeon to the Truss Society, I had the means of examining some thousands of ruptured patients, and thereby enjoying a field of observation which can, I believe, be obtained no where besides. Presuming the fact to be established, the practical inference is certainly important.* For in addition

* Since writing these observations, I find that Mr. Lawrence has observed facts analogous to those here mentioned.—See his valuable Treatise on Ruptures, page 18, second edition.

to the other well known character and consequences of strictures, it shows how necessary it is that the treatment for their removal should be commenced at an early stage of the disease. In ordinary micturition, when the bladder is but very moderately distended, the abdominal muscles and diaphragm are, as it were, instinctively put in action to assist in the commencement of the urinary evacuation; and in stricture the efforts of these powers are so gradually increased, that a patient is but little aware of the force which they are exercising. Further, it may be suggested that the position in which a patient stands during micturition may, in a degree, be considered favourable to the occurrence to which I have referred as resulting from the combined influence of the abdominal muscles and diaphragm. To continue the enumeration of the symptoms, it may be observed that the stream, besides being less in volume, is usually misshapen, being either spiral, flattened, or forked: there is also a dribbling on the linen after micturition; and the same circumstance happens with the seminal fluid after sexual intercourse.* Involuntary nocturnal emissions are occasionally a symptom of stricture; but, as has been before observed, they more frequently accompany the peculiarly irritable condition of the urethra which is so often a precursor of that affection. If the

* The urine at this period frequently possesses an unusually fetid odour.

disease be neglected at this period, all the symptoms rapidly increase in severity; the stream becomes excessively small, the straining very violent, and the calls to make water are so frequent, that a patient may be obliged to rise perhaps twenty times in the night, and as many in the day, to execute this function. This depends on the sympathetic irritability of the bladder, which not only renders it incapable of containing more than a small quantity of urine, but which also induces a painful action of it after the water has been evacuated, so as in some cases to resemble a common symptom of stone. To these symptoms may be added, pain in the loins, front of the thighs, darting sensations in the perineum, all of which may separately or together attend those previously described. It may be doubted whether discharge from the urethra, and pain in this canal, should be included among the ordinary symptoms; they are decidedly not unfrequent, yet I have seen a very great number of cases without either of them. With regard to this discharge, it may be observed, that it has frequently led surgeons to mistake stricture for gonorrhœa. The latter complaint, when neglected, leaves the urethra (although discharge may have ceased) in a state of irritation; and in such cases, even if there be no stricture, a muco-puriform discharge frequently follows immoderate indulgence in sexual intercourse; and if there really be stricture, it is very likely to happen. A patient thus situated applies

to a surgeon, and with soothing measures the discharge ceases in a few days, both parties believing that it was gonorrhœa: nothing, however, can be more easy, than to distinguish the two complaints; the origin and progress of the one is altogether dissimilar to the other. In the case which has been mistaken, it will be found that the discharge occurred very quickly after connexion; the ardor urinæ is neither so severe, nor usually so confined to the anterior part of the canal. We often find, on inquiry, that the same circumstance has happened before. The cessation of the discharge generally takes place in a much shorter time than that resulting from gonorrhœa, whereas in some cases it is prolonged to an indefinite period. It is under the latter circumstances that a man who has previously mistaken the case blunders (if I may be allowed to say so) in its real nature; for, perplexed that the discharge has not yielded to a long round of medicines, &c., reputed remedies for gonorrhœa, he is induced to examine the urethra, when he discovers, for the first time, his error.* Before the more unusual symptoms are mentioned, it may be observed, that the foregoing are always aggravated by intemperate living, or immoderate indulgence in sexual intercourse. I have frequently known patients who imagined themselves better, after taking a larger quantity of wine than usual,

* This occurs also where there is simply irritable urethra without stricture.

but if they have felt any benefit, it has only been temporary, as the moment the immediate stimulating effect is removed, the symptoms return with augmented severity. Those symptoms which, though not very infrequent, can still be scarcely included in the account of common cases, are the following:—The difficulty of micturition is always influenced by change of temperature, and usually rendered less by warmth; there are patients, however, who make water more easily by passing from a warm to a cold temperature. Although there is generally more or less disorder of the general health, yet, in some instances, this is very strongly marked: some apply with furred tongue, costive bowels, disordered appetite, lassitude, and inaptitude for exertion; others are subject to attacks of intermittent fever:* a third class have a peculiar kind of nervousness, or irritability, which it is difficult to describe; but I perfectly agree with those authors, who describe an habitual state of excitement as a frequent attendant on this complaint, evinced by the patient being annoyed by trifles, and his temper ruffled by circumstances which, at other times, would scarcely have excited his attention; occasionally, in addition to pain in the testicles, there is inflammation and enlargement of these organs, and I have known one testicle become enlarged and again subside, and then the other become affected in the same manner.

* I have never witnessed this in stricture where no instrument had been passed, but it is mentioned by writers on this subject.

It is often difficult to determine whether the constitutional disorder, which co-exists with stricture, be the consequence of that complaint, since they may reciprocally act on each other; but that it is so, in many cases, is clearly shewn by its total subsidence on the canal being restored to its natural condition.* The irritability before described is easily intelligible, when we consider the peculiar functions, the exercise of which is interfered with or prevented; and the annoying nature of the symptoms, frequently rendering a man incapable of enjoying society; or, indeed, of following any favourite pursuit steadily which would compensate for the loss of it. It may be observed, that the severity of the symptoms is not always commensurate either with the duration of the disease, or the degree of stricture; and that, although the progressive developement of them varies considerably in rapidity, in different individuals, it is, nevertheless, in the latter stages, always more rapid. If stricture in an advanced stage be still neglected, the difficulty of micturition increases, until at last retention of urine supervenes. If this is not relieved by art, the urine becomes effused, and produces inflammation and sloughing, more or less dangerous, according to the importance of the parts interested. The bladder

* Cases are recorded, in which patients have consulted physicians for disorder of their general health, which, from its obstinate nature, and from its subsiding on the discovery and subsequent removal of stricture, evidently depended on the existence of the latter affection.

may burst, and the urine be brought in contact with the peritonæum, in which case we have no hope for the safety of the patient; more commonly, however, the urethra ulcerates posterior to the stricture, and the urine becomes effused into the cellular tissue of the penis and scrotum, perinæum, or by the side of the anus, and occasionally into that covering the groin and front of the thigh, thus giving rise to abscesses and fistulæ, the treatment of which will be considered in the proper place. Sometimes patients will have all the symptoms of stricture with great severity, where the actual diminution of the canal is inconsiderable. Occasionally, a patient, in the advanced stages of the disease, never makes water in a stream, but it continually dribbles from him with much straining, constituting a kind of perpetual strangury, so that I have known a man obliged constantly to wear a bottle, previous to his being properly treated. True incontinence of urine occasionally attends stricture; this, however, is not common. We often find patients obliged to make water the instant they feel a desire to do so, which depends on the great irritability of the bladder; but this is, of course, very different from that which I term incontinence, because in the latter the urine flows involuntarily; this, however, rarely happens. Other symptoms, though infrequent, are occasionally met with; thus, I have known patients complain of pains in the bones, particularly during night,

who have asked whether it is not probable that they might result from the remains of a venereal affection which they have had some years before. Eruptions on the skin have occurred with stricture, and I recollect a case in which they disappeared on the removal of this complaint. They subsequently, however, returned, without being accompanied by any renewal of the stricture. When it is considered, however, that a disordered state of the general health most frequently accompanies the complaint, it will, I think, be immediately perceived that the various symptoms, to which it may thus indirectly give rise, must be infinitely diversified. The occasional attendants on stricture will be treated of in their proper place.

CHAPTER V.

GENERAL OBSERVATIONS ON THE TREATMENT OF STRICTURES.

It is unnecessary to enter into an analytical examination of all the methods which have been proposed for the removal of stricture; and as it would oblige me to exceed the limits prescribed to this treatise, I shall, with one or two exceptions, only refer particularly to those which, in different cases, I have found useful.—The principles, on which the restoration of the canal to its natural condition has been attempted, have varied considerably. In general, the object has been either to effect a mechanical but gradual dilatation of the contracted portion; to remove the impediments by the application of substances, the precise nature of whose action is somewhat undeterminable; or, lastly, to destroy them by the application of caustic. The first plan has been executed in two ways; first, by introducing an instrument through the stricture, and then extending the different parts of which it is composed by means of a screw, or some other contrivance for that purpose;* or by

* Usually called Dilators.

the successive introduction, at proper intervals, of bougies, or suitable instruments of increasing diameter. For the purpose under present consideration, I prefer decidedly the latter plan; but, as I have not been in the habit of using the dilator, I shall briefly give the reasons by which my choice has been influenced. A very little consideration of those changes which constitute disease, or those by which organs are restored to their healthy condition, will convince us that neither one or the other can be effected suddenly; that the safety with which the latter is effected, is, generally, more or less, in proportion as its accomplishment is gradual. This remark is equally applicable to the diseases of other parts, as it is to those of the urethra. It is not consonant with reason to suppose, that we can stretch living parts as we can inanimate substances, possessing an elastic property; yet we must think after this manner if we have recourse to the dilators; although, as before observed, I have not been in the habit of using them, I have frequently seen the disadvantage of increasing the size of the instrument too rapidly. They never can be of any use except where the stricture is capable of admitting an instrument, however small; and, in such a case, the restoration of the canal can be effected by other means which enable us to regulate the progress of the dilatation with mathematical accuracy. I would beg also to observe, that doubts may justly be entertained whether, by the latter plan, the stric-

ture is removed by dilatation, strictly so called. Many canals of the body certainly, in their healthy condition, admit of this dilatation, and so may the urethra when strictured, provided the alteration in structure be inconsiderable, since the natural texture of the lining membrane does not seem prohibitory of it. But where those changes have occurred, which uniformly attend cases of any considerable duration and severity, it is more probable that the pressure of the instrument produces absorption, either ulcerative or otherwise, of the newly formed substance; I am, however, of opinion that the dilator is an instrument always unnecessary for the removal of stricture, and frequently improper. For the foregoing reasons a bougie or silver catheter is to be preferred, where it is the object to remove the contraction by dilatation; to which may be added another, viz. the facility with which, in most cases, this is effected.

Some persons have, in severe cases where no instrument could be passed into the stricture, endeavoured to overcome the obstruction by thrusting a conical catheter, or other firm instrument, onwards; I dare not say through the stricture, for the probability is that it rarely takes the route intended by the surgeon. Indeed, this practice is fraught with so much danger as never to be admissible. There are many facts, shewing the difficulty and mischief attending it, which should absolutely prohibit any prudent surgeon from ven-

turing on its employment. Firstly, the most accurate knowledge of the anatomy of the parts will be insufficient to enable us to ascertain that we are employing force in the right direction. Secondly, it should be recollected, that a strictured portion of the canal is less yielding than any other part, and the instrument will certainly pass where it meets with the least resistance; and lastly, I would recommend those who are disposed to follow this practice, previously to inspect the different preparations in this town, shewing the frightful deviations which have occurred in the passage of instruments from the route intended.

It is no argument to say, that in a few fortunate instances this practice has been successful. There are difficulties in the way of getting evidence on the contrary side which are obvious, but the preparations sufficiently shew that, were these removed, there would be no dearth of it. I have referred to this point in a former section. Examples of false passages made by instruments are frequently presented to us, but we generally inquire in vain for the histories of the unfortunate patients. Inexperience might occasion a moderately cautious man to thrust the point of a catheter through the urethra; and those, who are well acquainted with the facility with which this may be done, might, perhaps, in such a case, excuse it; but a surgeon, who knowing (as he ought) the hazard attending the practice I am endeavouring to reprobate, would, if he made a false

passage, be absolutely inexcusable. In cases where no instrument can be passed through a stricture, by the employment of caustic or other means, it is better to cut down to and divide the stricture, in a manner hereafter to be described. In removing strictures, by introducing instruments of increasing diameter, surgeons have either employed common wax-cloth bougies, those made of elastic gum, or the metallic, which last has been called sound or bougie, as it was composed of flexible or unyielding materials. First, then, of the common wax-cloth bougie: this instrument is of little use, except for taking the impression of a stricture, for which purpose it is well calculated: for any other, the elastic gum is preferable, because it is smoother than the common wax-cloth, and glides more easily through the urethra. The waxed cloth bougie is more likely to be detained by spasm alone; and if it be of small size, in a case of firm and narrow stricture, or even where the canal is irritable, the point of the instrument, as soon as it meets the obstruction, yields and turns round against the side of the urethra; and then the continuance of pressure can only urge the point still further in the wrong direction it is taking. Sometimes the stricture will make a circular indentation on a soft bougie which is prohibitory of its further progress, at least it would appear so; for I have often passed an elastic bougie of the same size without much difficulty, after the common bougie had failed. The elastic gum has

all the additional recommendations mentioned in the chapter on the introduction of instruments in general.

Metallic bougies are either flexible or unyielding; the former, I believe, are at present but seldom used; they are too little flexible to have any advantage over the elastic gum, and too much so to supply the place of a firmer instrument. The metals or combination of metals of which they are made, are different, but of all metallic instruments, the silver catheter, I think, has indisputable claims to our preference; it admits of an exceedingly fine polish and uniformity of surface, which very much contribute to facility of introduction; its lightness enables us to judge with the greatest accuracy of the force which the obstacle opposes to its progress, as well as that which we may employ to overcome it: further, we are assured of its entrance into the bladder by the urine escaping through it. The cases in which the plan of dilatation forms part of the treatment, as well as those in which it appears especially applicable, will be described hereafter. The employment of caustic, and of the argenti nitras in particular, is an old remedy revived by Mr. Hunter; and since his time, Sir Everard Home has employed it very extensively. The numerous cases recorded by the latter gentleman, sufficiently prove its powers in removing strictures; but his work, written with a candour well worthy of imitation, contains ample evidence to shew that its in-

discriminate use is by no means unattended with danger. Hæmorrhages, retention of urine, and intermittent fever, particularly it seems in those who had resided in warm climates, were frequently consequent on its use. The effect of this caustic is to produce a slough which could not be in some cases confined to the stricture; otherwise we are at a loss to account for such profuse hemorrhage as that which occasionally happened. From the very nature of caustic, it is difficult to confine its action; this we find on applying it to other parts of the body where we have an opportunity of witnessing its effects. The consequences above mentioned naturally induced practitioners to look for some other remedy; many altogether relinquished the employment of the argenti nitras; and its disuse probably became more extensive, in consequence of Mr. Whately's shewing us how much more safely we might employ the kali purum; which, in the generality of cases, is equally effectual. However, there can be little doubt that, in relinquishing the argenti nitras altogether, many ran into the opposite extreme. We frequently expect more from a remedy than a cool consideration of its nature would warrant, and when disappointed we as hastily reject it altogether. Impressed as I am with the various occasional inconveniences attendent on the use of the argenti nitras, even in the most skilful hands; and believing, as I do, that in general the kali purum is an equally effectual, and certainly a safer application, I feel

obliged to admit, that there are a few cases in which the use of the argenti nitras is to be preferred, and which will be described in their proper place.

The mode in which Sir Everard recommended the caustic to be applied, is as follows:—"Take a bougie of a size that can readily be passed down to the stricture, and insert a small piece of lunar caustic into the end of it, exposing the surface of the caustic, but surrounding it every where laterally by the substance of the bougie. This should be done some little time before it is used, for the materials of which the bougie is composed become warm and soft by being handled in inserting the caustic; and therefore, the hold the bougie has of the caustic is rendered more secure after it has been allowed to cool and harden. This bougie, so prepared, is to be oiled and made ready for use, but previous to passing it, a common bougie of the same size is to be introduced down to the stricture, to clear the canal, and to measure exactly the distance of the stricture from the external orifice. This distance being marked on the armed bougie, it is to be passed down the stricture immediately upon the other being withdrawn." Cases having occurred, however, in which the caustic had escaped from the bougie, Sir Everard, I believe, afterwards preferred using an instrument into which a small cylindrical portion of caustic had been introduced at the time the bougie was manufactured. I have, however, always employed the first mode

whenever I have had occasion to use the argenti nitras, and have never met with any accident of this kind—always, however, using an instrument the point of which is too large to enter the stricture. As the above directions do not inform us of the definite size of the piece of caustic employed, I may add that I have seldom used a portion greater than the head of the largest sized pin. Another mode of using the argenti nitras has been suggested by Mr. Whately, which consists in making a sort of paste with mucilage, and moulding it round the extremity of the bougie. As I do not see the particular advantage attending this mode, I have never adopted it; that the caustic may, in this way, come in contact with other parts besides the stricture, is sufficiently obvious.

The kali purum was introduced as a remedy for stricture by Mr. Whately; it is certainly a most powerful caustic, yet, by reason of its composition, it can be applied in the manner recommended by him without any fear of bad consequences. The security in its use arises from the minuteness of the portion employed, and from its being readily miscible with oily and mucilaginous matters. There has been a great deal of speculation concerning the precise mode in which this caustic acts. It is probable that it acts differently in different cases: Mr. Whately speaks of its producing an abrasion, but there is something unintelligible in this term when it is applied to the action of a chemical substance

on living parts. The probability is, that it generally acts as a stimulus primarily, whatever may be its ultimate effect; and that, be the quantity ever so small, it occasionally produces a slough; if it be large, it will, of course, do so. Its usual effect in strictures is, however, very analogous to the effect of stimuli elsewhere. Irritable strictures are removed very quickly by kali purum, and in those which are not particularly so, may we not believe, that it stimulates them and produces absorption. It is an admitted principle, that newly-formed parts are incapable of sustaining vehement action; and if this reasoning upon determined facts apply to strictures, which in many instances may be so considered, it readily explains the mode of action by which the kali effects their removal. I have made some experiments with a view to ascertain its precise mode of action when applied to the urethra, but as they were not sufficiently conclusive, I shall not mention them further than remarking, that as far as any inference was warranted, it was decidedly in favour of the opinion that the kali acts as a stimulant. The manner in which the kali is applied differs little from that which is recommended for the argenti nitras: the quantity employed by Mr. Whately was, however, much smaller; in his work he has published a scale of sizes, the largest of which is not bigger than the head of a common pin. I have certainly often used a more considerable portion without any ill consequences following, yet

I see no objection to the scale proposed as a general rule. Mr. Whately recommended, the kali to be inserted on the end of a bougie of a diameter capable of entering the stricture. I never could understand the advantage arising from this plan, and have therefore always used it on a bougie of at least a size larger than the stricture would admit. If the point of the instrument pass fairly into the stricture, there must be a probability of the kali being applied to the healthy membrane posterior to it, whilst the object should be to confine its action strictly to the affected part, on the surface of which, by the mode I recommend, it must be more extensively diffused. This is further promoted by turning the bougie gently in a circular manner, while the pressure which preserves it in contact with the stricture is continued. I may observe further, that it is not necessary under these circumstances to withdraw the instrument to a certain extent, and repass it as recommended, when the bougie has entered the stricture.

I have thus given a general view of the different modes of practice which are found most useful, or which have been suggested for the removal of stricture; and in considering the comparative utility of one or other of them, I shall be guided by the facts which practice has presented to my observation. I believe the great error in treating strictures has resulted from an attempt to remove them by one method, which experience shows to be fruitless and

prejudicial; yet it is equally erroneous to suppose that every case requires a different kind of treatment. In speaking of the surgery of stricture, I shall first describe that mode, or combination of modes, which practice has shewn me most useful in relieving ordinary cases, which however have differed much in their severity; and afterwards describe those in which I have found one or other plan especially advantageous.

CHAPTER VI.

ON THE TREATMENT OF ORDINARY CASES.

As stricture admits of relief or of removal by different methods, and as there is a difficulty in choosing that which is most suitable to each particular case, it may be useful to inquire, before that treatment which I have found to admit of the most extensive application is described, what are the objects on the ready and safe accomplishment of which our preference should depend. They may be concisely stated thus: first, a restoration of the canal to its natural diameter; secondly, security from the intervention of untoward symptoms during the treatment; and thirdly, prevention of the recurrence of the disease. In order that the second object which I have mentioned may be obtained, I would recommend the practitioner constantly to bear in mind, that stricture can only be overcome or removed in a gradual manner; for if the instrument be introduced too often, or its size be increased too rapidly, the urethra will become so irritable, that a fortnight or more may elapse before we shall be able to proceed with the treatment. As a general rule it may be laid down, that as long as the improvement is

progressive, the surgeon and the patient should be satisfied. To prevent the recurrence of stricture is often extremely difficult, and I am persuaded that in some cases it is impossible. Practitioners have usually attributed the return of stricture to some defect in the treatment; and that many cases admit of this explanation, is sufficiently obvious, but I by no means believe that it applies so extensively as has been supposed. However perfectly we may restore the canal to its healthy condition, it is not in our power to remove the idiosyncrasy which occasionally disposes patients to the attack of stricture, much less to prevent them from exposing themselves to new sources of excitement. Even during the treatment, when the more distressing symptoms are relieved, it is often extremely difficult to induce individuals to adhere strictly to the rules prescribed. As it is my object faithfully to give opinions warranted by practice, I must here candidly acknowledge, that I know of no treatment which will uniformly prevent the return of strictures, although in many cases it may certainly be accomplished, provided the patient avoid all sources which have an obvious influence in their production. In the generality of cases the following combination of two modes of treatment is to be preferred. The first application made by a patient is usually under circumstances exceedingly unfavourable to the introduction of any instrument; the canal is highly irritable, and contracts so strongly on the bougie

throughout its whole extent, that it is difficult or impossible to ascertain the seat of stricture; it is better then to defer the examination for a few days, the interval being employed in the administration of the following measures, which admit of being divided into constitutional and local: the constitutional treatment consists in freely evacuating the bowels, in recommending an exceedingly mild and unirritating diet, and the abstinence from wine and spirituous liquors; it is not very material what medicine we employ for the first purpose. Jalap and calomel, the latter with colocynth, or castor oil, will generally answer this intention sufficiently well; I have usually preferred the jalap and calomel; it is quicker than the colocynth, and less nauseous than the castor oil. Five or six grains of jalap, and half a grain of calomel, are given every four hours, until a sufficient number of evacuations are procured; the bowels in this way are freely evacuated, the dose exactly proportioned to the effect we desire to produce, and its operation rarely attended with pain: this mode of administering purgatives is one of the many useful lessons taught by Mr. Abernethy, for which in practice I have had abundant reason to be grateful. It has another recommendation, viz. that medicines which usually give pain may, in this way, be frequently administered without doing so; I have found it better to avoid giving saline purgatives, where the evacuation of fæces is the principal object, as they generally produce

secretion without emptying the intestines, and a degree of irritation in the lower bowels, which for obvious reasons it is desirable to avoid; colocynth will occasionally have the latter effect, but this will seldom happen when it is administered in the manner proposed. The patient will, however, very often direct us in the selection of an aperient medicine; since, whatever he describes as usually evacuating the bowels comfortably, may with propriety be preferred. The diet should consist of plain boiled meat with a portion of vegetables, and it should be very moderate in quantity. I have sometimes found advantage in prohibiting meat altogether, but this will seldom be necessary. The drink should be either barley water, toast and water, linseed tea, imperial, or some other equally mild liquor; beer, wine, and spirits, as I before observed, should be abstained from. It happens occasionally that there are symptoms which render other medicines necessary; such as, disordered liver, peculiar sensation about the stomach, &c.; but, as there is an endless diversity in those affections with which stricture may be combined, it is impossible to say more than that the treatment of them must be left to the judgment of the practitioner, and must be regulated by general principles. The local treatment consists chiefly in applying leeches to the perineum, and fomenting the part with warm water night and morning; the latter is most effectually accomplished by the semicupium. Rest should also be enjoined, and the patient

recommended to abstain from the indulgence of sexual intercourse, since this is obviously calculated to produce irritation. Latterly, I have been very explicit in this point, from having met with married men whose cases went on unfavourably until they resolved to comply with this injunction. Where there is evidence of greater irritation than usual, I have found much advantage from recommending a suppository (opii gr. ij. hyoscyami gr. v.) to be placed in the rectum the night previous to the examination of the urethra in the morning. I cannot, indeed, speak too highly of suppositories, since I have several times proved their efficacy by means especially directed to that purpose. We cannot, indeed, expect that their beneficial effects should be permanent, but I have frequently known a patient, whose rest was completely destroyed by his calls to make water, sleep the whole night without being disturbed, after the application of a suppository; and, however temporary the tranquillity thus induced may be, it is always of the greatest consequence, by the facility it affords us of examining the canal. The object of our examination is to ascertain, if possible, the state of the whole urethra, hence it is not always expedient to employ a full-sized instrument; since, by so doing, we may only recognise the anterior stricture. Where the symptoms, then, are unequivocally indicative of this complaint, it is better to regulate our choice as to the size of the instrument, by the volume of the

stream. I have generally employed one a size larger than the patient represents the stream to be when its volume is most considerable. For reasons before mentioned, the examination should be made with an elastic gum bougie, inclosing a wire. If stricture be found, and its opposition to the progress of the instrument prove permanent, after the different manœuvres recommended, it should be withdrawn, a soft plaster bougie of the same size should then be passed to the point of obstruction, and pressed gently against it for a minute or two, when its extremity will generally indicate the situation and degree of the stricture. An instrument of the size indicated should then be introduced, and passed gently through the obstructed portion. We cannot always proceed thus far at once, but if the manipulation is gently conducted, we may, generally speaking, be able to do so. This mode of proceeding may appear unnecessarily tedious, but I have so often passed an elastic gum catheter where the common bougie had failed, that I feel obliged to recommend its use in the first place. Nothing appears to me more desirable than to gain a knowledge of the state of the whole urethra as early as possible; for should we find that there is more than one stricture, the progress of the case will be rendered much quicker by directing our attention especially to that which is nearest to the bladder. If the canal be exceedingly small at the seat of stricture, the silver catheter is to be pre-

ferred to the elastic gum bougie, for we have no control over the point of a small instrument of the latter description. I cannot too strongly recommend the greatest care in the use of the small silver catheter, since it is especially calculated to do mischief, if more force is used than is sufficient to keep it fairly in contact with the obstacle. Where, indeed, the opening through the stricture is sufficiently large to allow of our employing an elastic gum instrument, there is considerable advantage in resorting to the silver catheter at the latter period of the case, for reasons which have been before mentioned in relation to irritable urethra.* When the catheter or other instrument has been passed into the bladder, it is right to leave it there for a few seconds only at first. Indeed, on this point, the same observations apply as have been made before, in the treatment of the above-mentioned affection. The size of the catheter should be gradually increased at each subsequent introduction. The intervals will vary considerably; at first it will rarely be advisable to attempt repeating the use of the instrument oftener than once a week, afterwards it may be done twice during that period with advantage. The passage of any in-

* I have seldom, of late, employed the elastic gum instrument, after I had once introduced the silver catheter. But, to some students who have not had much experience in passing firm instruments, the elastic gum (until the canal has been somewhat enlarged) may be recommended as preferable.

strument through the urethra generally produces more or less irritation, and this should always be allowed to subside before its employment is repeated. For the scale of sizes, I refer the reader to the plate, where the smallest and largest which I usually employ are figured. It is not very frequently necessary to use any other instrument than the silver catheter, where we are enabled to pass one even of the smallest size into the bladder, but it is often expedient to do so, and in cases of the following description :—it sometimes happens that, having dilated the strictured part to a given point, we are unable, notwithstanding the absence of any particular irritation, to pass an instrument of increased size at the next visit; in this case, we may, by passing it to the stricture at two or three subsequent periods, be eventually enabled to conduct it through the canal into the bladder. The pressure thus made on the stricture may probably induce ulceration ; it is objectionable, however, from its uniformly rendering the stricture so exceedingly sensitive ; and, as considerable delay is occasioned by this mode of proceeding, I prefer, when I cannot increase the size of the catheter, employing the kali purum. I am informed that many practitioners have altogether relinquished the employment of this remedy, and I can only attribute it to their having expected more from it than it is capable of accomplishing, or to its having been incautiously applied. The kali has certainly ap-

peared to me to be unnecessary in some instances, and, (in the extent that we are warranted in employing so powerful a caustic,) inefficient in others; yet again, there are some cases in which it is a very useful assistant, and a few in which it claims decided preference. In the use of the kali I follow the directions of Mr. Whately, with the exceptions mentioned in the fifth chapter. In all the cases (and the number is very considerable) I have scarcely met with any unfavourable consequence resulting from it. It generally increases the tenderness of the part for a few hours, perhaps a day; and I have seen, though very rarely, pain in micturition for two or three days succeed to its application, but this is the worst consequence that I have ever witnessed. The particular case in which this remedy is to be preferred to all others, will be mentioned in its proper place. Under the circumstances before mentioned, one or two applications of the kali will enable us to proceed with the treatment, and often render the urethra capable of admitting an instrument a size or two larger than that, which before its application, we failed to introduce. The period of treatment is thus shortened, and the patient generally suffers much less from the kali purum than from the repeated pressure of the silver catheter. The caustic should now, of course, be laid aside, and the original plan persevered in. When we are enabled to introduce the full-sized instrument, it should be passed occasionally for a week or two,

when the patient may be dismissed. On this occasion, I generally think it right to warn him of the usual causes of stricture, and admonish him with regard to regular living, and the influence which tranquillity of the general system has in preventing a return of his local malady. In severer cases I have also recommended patients to have their urethra examined once a-year, if circumstances rendered it convenient, because, should any disposition to stricture recur, it may with facility be removed. It is difficult to say what is the exact size of the catheter, with the introduction of which we should be content, since, to attempt any thing more than general rules on this point, would seem to me perfectly absurd. It appears to me impossible, even where the canal is completely restored to its natural condition, to prescribe any definite rule in regard to this point; and for this reason, that there can be little doubt of great difference existing in the diameter of the urethra in different individuals. The largest size I introduce is No. 14 of the annexed scale; in some cases I have been obliged to be content with No. 12., and in very old strictures, attended with palpable alterations in structure, I have been obliged to be content with a much less size, perhaps, about No. 9. The latter cases are, however, rare; and in general terms, therefore, it may be said, that No. 14 is the size with the introduction of which we should be satisfied. During the whole treatment, the patient should foment with warm

water night and morning, and the bowels be kept regular; the occasional repetition of leeches to the perineum will powerfully assist us in preserving a quiet state of the urethra; should any untoward symptom occur, as an extraordinary attack of irritation, or intermittent fever, the introduction of the instrument should be discontinued, and absolute rest enjoined; as for the intermittent, the observance of the means just mentioned, combined with the use of gentle aperients, generally removes it in a few days. The other interruptions occasionally encountered in the treatment, will be spoken of as separate subjects.

In general, however irritable the bladder may have been at the commencement of the treatment, and, however severe and distressing the symptoms resulting from this condition of the organ, it gradually subsides with the progress we make in the removal of the stricture. There are, however, exceptions, where, notwithstanding the urethra readily admits of a large instrument being passed into the bladder, micturition continues very frequent, and the mucous membrane of this viscus so sensitive, that the contact of an instrument produces considerable suffering. Usually this occurs in cases of long standing, but not invariably; in such cases it may possibly happen that the disorder of the bladder has been the primary affection, but in most of those which have fallen under my observation, I believe it to have been secondary, and, from the

facility with which it was removed, unattended by any material change in the structure of the organ. I do not mean to say that the muscular texture may not have been increased, for this so commonly follows stricture, that there is scarcely any instance where it has been of long standing, in which it has not happened in a greater or less degree.

The plan of treatment which I have found successful in relieving this unusually protracted irritation of the bladder, is the following:—in the first place, I relinquish entirely the introduction of any instrument, for I have found that in those cases where an anxiety to ascertain that there was no recurrence of the stricture, induced me to introduce a bougie, its employment was invariably succeeded by a greater or less exacerbation of the symptoms, with an increase of the mucous discharge, which usually, but *not invariably*, accompanies this affection. I enjoin a very strict regimen; the quantity of food is small, and of the mildest quality; abstinence from animal food is generally productive of benefit; and all vinous, spirituous, or other stimulating drinks, should be forbidden. Great attention should, of course, be paid to the bowels, no day being suffered to elapse without an alvine discharge; glysters are very useful, and may be administered every day; it is usual to medicate them with opium, but, as I generally use suppositories, I never recommend any other enemata than consist of warm water, or mucilage. In addition to this

treatment, all that which, during the existence of the stricture, is employed for the promotion of a tranquil state of the parts affected, should be continued. With regard to the medicines which have been supposed to do good in these cases, or in the irritable bladder otherwise occurring, I cannot say that I have seen much advantage derived from their exhibition. As to injections thrown into the bladder, my experience leads me to consider them of very doubtful efficacy. I have known even warm water, used in this way, produce a considerable increase of discharge, unattended by any alleviation of suffering. I have certainly seen the carbonate of soda given with some bitter infusion, with about fifteen drops of laudanum, every three or four hours, productive of benefit; and some good has occasionally followed the exhibition of the same quantity of laudanum with camphor mixture, where the state of the stomach appeared to indicate the propriety of administering the latter medicine. A further discussion of this subject would lead me to consider the diseases of the bladder generally; this is not my object: I may, however, state, that where this viscus has become changed in its mucous structure, the most that we can generally accomplish, is to alleviate the sufferings of the patient.

CHAPTER VII.

OF THOSE CASES TO WHICH THE KALI PURUM IS ESPECIALLY APPLICABLE.

Of the general use of the kali I have already spoken, and have included its employment in the treatment of ordinary stricture. Although its use, under the circumstances already mentioned, is advantageous, as it contributes to the more speedy removal of the stricture, it is nevertheless expedient rather than absolutely necessary. In very many instances, strictures of considerable standing may be removed by the use of the silver catheter alone; though, as I have before observed, the treatment of the same may be often happily expedited by the addition of the kali as described. The case, however, in which the kali is so particularly serviceable, is easily known and described — easy of relief by this caustic, but exceedingly perplexing if otherwise treated. In the first place, I would observe, that in those individuals who have been presented to my observation, there has been some very obvious indication of a disordered state of the general health; although the extent of this, as well as its particular feature, has varied considerably.

The usual symptoms of stricture are present, and, in general, severe; the peculiarly distinguishing character, however, is a most remarkable sensibility of the stricture. However gently you may pass an instrument — however soft, or, indeed, whatever be its composition, the moment it arrives at the narrowed portion of the canal, the patient complains of severe pain; and, in those cases which I have seen, blood also invariably follows it when withdrawn. It is this latter circumstance which is calculated to lead the practitioner into error; mere irritability so commonly attends a stricture, and is so frequently relieved by the kali purum, that the excessive degree of it which characterises this case would not alone, in all probability, prevent a surgeon from at once applying this caustic. But a general impression, and so far not an erroneous one, prevails, that if a stricture bleeds, it is more prudent to delay the use of caustic, even where it is proposed eventually to employ it. I was much perplexed by these cases when I first met with them. I used various kinds of instruments; every measure that was calculated to relieve general or local irritation was strictly enjoined, and, as I had reason to believe, implicitly adhered to. Still, however, at the subsequent visit, the same failure in introducing any instrument occurred; and, notwithstanding the gentlest manipulations only were employed, the pain was still considerable, and blood (in some cases to the extent of several

ounces) followed after the instrument was withdrawn. Thinking, however, that these were only extreme cases of irritable stricture, and that the ungovernable disposition to hæmorrhage was merely the result of the extraordinary sensibility, I applied the kali one morning to a stricture which was at the time bleeding pretty freely, although the blood did not, in fact, flow otherwise than guttatim. The pain during its application was very considerable; yet, as it was not more than that which had been endured from the contact of the unarmed instrument, no part of it was, I think, attributable to the kali. The relief which followed, even within the space of twenty-four hours, was very considerable. Every symptom became diminished in severity, and the painful sensibility completely subsided after two applications; the disposition to hæmorrhage also no longer existed. I have since repeated this practice in every case in which these circumstances were present at the commencement of the treatment, without any hesitation, and have never had reason to regret so doing; the same good effects have been invariably the result. In all cases, the whole of the plan calculated to relieve irritation, has been perseveringly adopted at the same time, therefore, I cannot say what would happen if the kali were trusted to alone; were the surgeon to neglect this part of the treatment, it would be a gratuitous relinquishment of measures well known to be beneficial; so that it is scarcely necessary for me to

insist on the expediency of their adoption. The cases to which I have alluded, were those where at the same time no instrument, however small, could be passed into the bladder; a circumstance which the subsequent progress shewed to depend, in great part, on the very small opening through the stricture.

Sir Everard Home, in the last book which he published, entitled, "Practical Observations on the Treatment of Strictures of the Urethra, &c." has spoken of strictures which bled before the argenti nitras was applied, but not afterwards. I cannot, however, gather from his description whether they were cases of precisely the same nature as those to which I have just alluded. The simple fact of a stricture bleeding before the caustic had been applied, and not afterwards, by no means of itself proves the cases to have been analogous. There are very few instances of this disease, of any severity, where a small quantity of blood does not, at one or other period of the treatment, follow the introduction of an instrument. Even in those strictures which are least susceptible at the commencement, it rarely happens that a few drops of blood do not follow the introduction of the large-sized instruments, when the progress of the case renders their employment necessary. It is, therefore, to be remembered that hæmorrhage, even to a considerable extent, does not imply that the case in which it occurs is one of the kind here referred to, unless

it be accompanied with a very remarkable sensibility; it being, at the same time, impossible to touch the stricture with the softest instrument, without exciting pain and producing hæmorrhage. I cannot undertake to say what would be the effect of argenti nitras if employed in strictures of this description, since I have never used it. I have not done so, because the kali has never yet deceived me, and because, as far as we can ascertain the mode of action of the two substances, as applied to stricture, that of the kali seems much better calculated to relieve the condition of the stricture, on which its hæmorrhagic disposition depends. I have already stated an opinion, that the argenti nitras produces a slough, and that the kali only stimulates; this cannot be explained in any other way than through the modified power of the kali, in consequence of its so readily mixing during its solution with mucilaginous and oily matters, since, when applied under other circumstances, it is much the more powerful caustic of the two. In furtherance of this opinion of its action, it should be remembered how exceedingly minute is the quantity employed; which, in these cases, should never be larger than the head of a common pin. It is then more calculated to relieve morbid susceptibility than any remedy which produces a slough: this, though not easily demonstrable with reference to the urethra, is at least highly probable, when we consider the mode in which the morbid susceptibility of other surfaces

is most successfully relieved. In irritable ulcers, certainly, in some cases we find benefit derived from the complete destruction of the surface; but how much more frequently is this morbid condition relieved by the employment of what I may term graduated stimuli! The results which so frequently follow the use of the argenti nitras, even should it be found to answer, produce, in my opinion, strong arguments against its employment, where the object can be accomplished by any other remedy: it is not fair, however, to impugn the efficacy of any application in a particular case without giving it trial; wherefore, if the cases described by Sir Everard Home, and those mentioned in this chapter, be identical, which I do not believe, experience can alone determine the preference which is to be given to either caustic; it is scarcely judicious, however, for a surgeon to lay aside one application which has not yet failed him practically, to try another, the success of which, to say the least of it, must be admitted to be doubtful. As I shall relate a case of this kind of stricture, it is not necessary to say more than that the application of the kali should be conducted in the usual manner; the quantity should be exceedingly small, since the object is to stimulate only; wherefore, I have seldom employed a larger portion than that mentioned in the last page. I need scarcely repeat my decided opinion, that in these instances also, all the general treatment should likewise be persevered in.

CHAPTER VIII.

OF THOSE CASES IN WHICH THE EMPLOYMENT OF THE ARGENTI NITRAS WILL BE FOUND USEFUL.

In the generality of cases, the argenti nitras is now seldom employed: it is usually unnecessary, and, as has been before observed, very untoward symptoms frequently succeed to its application. Practice, however, informs us, that there still are cases in which this caustic is highly useful, and where it claims our decided preference to any other remedy. The particular case which I shall presently describe is rare, at least I have found it so; and the experience of those persons of whom I have enquired as to this point, is corroborative of this conclusion. The most remarkable feature in these cases is the extreme want of sensibility in the contracted portion. I feel great difficulty, however, in giving an exact description of it, for nothing is more common than to find a stricture but little sensitive; and my meaning might thus be readily mistaken, since, in the latter case, no such means as are recommended in this chapter become necessary. In the case where the argenti nitras is useful, the rudest manipulations

which are ever warrantable, are attended with no pain, neither does any blood follow the continued pressure of metallic instruments on the affected part; although the other ordinary symptoms of stricture are present, their severity does not appear in proportion to the narrowing of the canal. The most annoying symptom I have observed in this instance is the straining,—which is violent, but distressing rather than painful. The sensation imparted by an instrument to the hand of the operator, is as if he was pressing against something unusually hard. If the stricture be in the anterior part of the urethra, the latter is felt unusually hard on examination externally. That the characters of this kind of stricture may be still more clearly defined, I would observe, that it is the very reverse of that for which I have recommended the kali purum. Opportunities of examining strictured urethræ, with the previous symptoms of which we are well acquainted, but rarely present themselves, and this constitutes a difficulty inseparable from any attempt at the perfect elucidation of their pathology. I have never examined the urethra of a patient whom I had previously known to be afflicted with this kind of stricture, but I suspect that the mucous membrane of the urethra becomes unusually changed in structure. If this stricture is treated by the introduction of instruments of increasing sizes, it can be dilated slowly with impunity to a certain point, until perhaps it admits No. 8 or 9; but the instant

that the introduction of a larger is attempted, there is a sort of re-action in the stricture, evinced by a fit of irritation, rendering all the symptoms intensely severe, attended by a remarkable alteration in its character as to sensibility. The urethra, during this time, will not allow even a small instrument to pass through its strictured portion. I am convinced that our object here is to produce a slough, however superficial. This might be accomplished, no doubt, by the kali purum, but not with any certainty with the largest proportion generally used, and the exceedingly powerful nature of this caustic renders the employment of a quantity sufficient to produce this effect highly unadvisable. Indeed, the very points of excellence properly attributed to the judicious use of the kali, as recommended by Mr. Whately, become imperfections. The slough, under these circumstances, being seldom produced, in consequence of the kali so readily mixing with the mucus of the urethra, and the grease with which it is covered. As I have before mentioned, it is impossible, by any plan of simple dilatation, to restore the urethra in this case to its natural condition; and merely dilating it so as to relieve symptoms, is not, of course, attaining our object. The argenti nitras may be applied either in the same manner as the kali purum, or in the manner recommended by Sir Everard Home: I have usually employed the former plan, and used but a very small portion of it at a time. I see no particular advantage in the

plan of using the argenti nitras mentioned by Mr. Whately, and therefore have not adopted it. The exact situation and form of the stricture should first be taken by a soft bougie, and then, that armed with caustic should be introduced; a little oil, if it be passed expeditiously, will be sufficient to defend that part of the canal through which it passes to the stricture from being injured. The number of applications which will be advisable, must depend on circumstances. If ever so little progress be made, its use should be persevered in, and we should not lay it aside because no obvious benefit follows each single application. The urethra should be examined at each visit before the caustic is re-applied; and if, after three successive applications, ever so little advantage is gained, we are warranted in continuing its use. Should it, on the contrary, be found that no advantage is derived from its continued employment, I would never repeat it more than four or five times, since it can scarcely happen that the stricture shall withstand a greater number of applications. The use of the caustic should here be discontinued, because the probability is, that it has not been applied accurately to the stricture; there is danger, therefore, of the side of the canal suffering: which dissection shews to have occasionally happened. To guard as much as possible against this circumstance, as well as any other which occasionally follows the use of the caustic, the means recommended for ascertaining the exact situation and form

of the stricture should be attentively employed, and repeated previous to each successive application. The practitioner should always bear in mind, that the occasional interruptions in the treatment of stricture hereafter to be more particularly described are especially to be guarded against in the use of argenti nitras; and, that the system may have as little disposition to become disturbed as possible, the bowels should be kept freely open, the usual soothing measures perseveringly employed, and the caustic never applied, except when the patients' avocations allow the indulgence of at least twenty-four hours absolute quietude, after such application. With regard to the length of interval between each introduction of the caustic, this will depend on circumstances which apply equally to the kali purum, or, indeed, to the use of unarmed bougies; the local irritation or other consequences following one introduction being always allowed to subside before the caustic is again employed. Should hæmorrhage recur, we are directed by Sir Everard Home to enjoin rest, and freely evacuate the bowels; this, he states, is in general sufficient, but as large quantities of blood have been occasionally lost, it would be right to add the application of cold water over the parts concerned. Some individuals will bear, no doubt, a considerable loss of blood with impunity, but I have had patients where the constitution was so disordered, and in whom the general debility was so considerable, that I should have

feared the result of such hæmorrhage as occasionally follows the application of the argenti nitras. I should have observed, that the cases here alluded to are, in general, of some years' standing; which also supports the opinion of there being a considerable change of structure in the contracted part. I have thus stated freely my ideas with regard to the extent to which we are warranted in using this caustic. The candour of Sir Everard Home sufficiently shows to the unbiassed reader that its indiscriminate use is inadmissable. Whether I have described the case proper for its exhibition, the experience and practice of others may determine; I confess that my experience of this particular kind of stricture is limited; and of late it has been of the use of this caustic in general, since, in by far the majority of patients, I succeed much better with the kali purum, silver catheter, or by their combined employment.

CHAPTER IX.

OF THE TREATMENT OF THOSE STRICTURES IN WHICH A MORE CONSIDERABLE PORTION OF THE URETHRA IS AFFECTED THAN USUAL.

In the general consideration of strictures, it was observed, that usually only a small portion of the urethra is included in any one contraction: nevertheless, it happens occasionally that a considerable length of the canal, half-an-inch or more, becomes continuously contracted. Different practitioners have suggested different plans, for ascertaining the exact length of that part of the urethra which is thus affected; but as it is not my object to make a critical analysis of what has been written on stricture, I shall merely observe, that to me the plans proposed appear wholly insufficient for the accomplishment of their object, either as regards measuring the precise length of the stricture, or the safe application of caustics to its surface.* This kind of stricture is not very difficult of removal, provided the disease be not of long standing, or, what is of more consequence, the membrane be not

* Vide Arnott on Stricture of the Urethra; also Ducamp, Traité des Retentions d'Urine causées par le Retrécissement de l'Urêtre, &c.

materially altered in its structure. Should the circumstances just mentioned co-exist, the case then forms one of the most difficult that is met with in practice. It rarely happens, however, that the stricture is so changed, but that the urethra may be restored by a careful and judicious application of the means which I shall presently propose.

The mode in which these strictures are formed, may be either, that two separate ones have existed near to each other, and the interspace become subsequently contracted, or the whole space may have been simultaneously affected. The precise manner, however, in which they originate is not of much consequence, since it does not influence the treatment. It is important to remember, that here, as in shorter strictures, the opening through the narrowed space may not be central,—a point to which I shall have occasion again to allude. In endeavouring to ascertain the nature of the case I am considering, an accurate observation of the primary symptoms will afford us some assistance; it is by certain phenomena which occur in the treatment, however, that our knowledge of it is rendered certain. As to the primary symptoms in those cases which I have seen, they have not, in general, been characterised by unusual severity; and certainly in none by an intensity proportionate to the duration of the disease; the straining is, however, considerable. If the caustics be applied, little benefit follows their employment, nor any

material pain, provided their application be conducted as in ordinary cases. If an instrument be passed to a stricture of this kind, which has long existed, the sensation afforded is analogous to that met with in those cases for which I have recommended the argenti nitras; and probably depends on the same circumstance, viz. the alteration in the texture of the affected membrane. If an instrument, however, be passed through the contraction, the sensation experienced by the operator is strikingly different from that which he feels when passing it through an ordinary stricture; for, as it proceeds, we do not find that it moves more or less freely, as is usually the case, but that its progress is continued through a space that admits it with difficulty. Now this certainly happens at first with some other cases, because the same sensation may be produced by an irritable stricture, contracting strongly on an instrument, and thus rendering its further progress difficult. Here, however, the difficulty diminishes with each succeeding introduction, whereas in the case to which this chapter refers, the resistance is continued; and however you may increase the size of the instrument, although the degree of resistance varies as the canal approximates to its natural calibre, the sensation experienced is analogous. The difficulty in withdrawing the catheter is also a striking feature in the old and long stricture; in other cases, where this difficulty occurs, we feel a sort of jerk when the point has re-passed the contraction, the instrument

then being drawn out with ease; but in the long stricture the difficulty is very much greater, and we cannot recognise in the same manner, or with the same accuracy, the moment when it ceases to offer an impediment to the return of the instrument. In a patient whose case I shall relate, this difficulty was strikingly illustrated: in this individual I had just passed a silver catheter, when a gentleman called on me, by no means unaccustomed to the introduction of instruments. I mentioned the particulars of the case to him, and after the catheter had remained as long in the urethra as was intended, I requested him to withdraw it. He accordingly commenced doing so, but declared that he could not succeed, having employed as much force as he considered safe or vindicable. This was certainly a very severe case of the kind, but the difficulty is always considerable: the best mode of proceeding under these circumstances is, to commence by an attempt to withdraw the catheter in the usual way, the effort being extremely gentle, yet unremitted; the handle being directed towards the abdomen. As the penis becomes elongated, in consequence of the stricture closely embracing the instrument, the egress of the latter will be much facilitated, by drawing the penis as it were from it with the left hand, whilst the attempt to remove it by the right is continued. The best plan for the removal of this stricture that I know, is the employment of the silver catheter; and

although the admission that in a few instances it is not successful, would imply that there is still a desideratum in the treatment of stricture, I verily believe that the use of this instrument, when properly conducted, presents greater advantages than any other plan which has been proposed.

I can confidently assert, that I have almost uniformly succeeded by this practice; and in one case where I was less fortunate, the patient was rendered very comfortable. (See Sheppard's Case.) And where success does not attend this practice, it will be found that the failure does not depend on the length of the stricture, abstractedly considered, but on the change of structure by which it is accompanied. The manipulation should be carefully and skilfully conducted; and there are some rules to be observed, which, as they apply to this case in particular, I proceed to describe. It has been observed, that the opening may not be central; and this should make the surgeon particularly cautious when he feels confident that his instrument has entered the stricture; for if he attempts to facilitate the progress of the catheter by any additional force, should the opening be irregular, he will assuredly make a false passage. Therefore, whatever progress the instrument may be making, no more pressure should be excited than when it first touched what I may term the anterior part of the contraction. With regard to the intervals between each application of the catheter, they may be regulated

as in ordinary cases: the time which the catheter should be allowed to remain, requires consideration. No one would certainly think of keeping an instrument in the urethra, if its presence was productive of much irritation; but as the benefit derived from each introduction is generally proportionate with the length of time that the urethra is capable of enduring the presence of the instrument, no means should be neglected which have ever so remote a tendency to preserve a tranquil state of the canal. Besides employing the usual measures for that purpose, I would recommend the surgeon to introduce the instrument while the patient is in bed; and if he be suffered to rise, walking should be prohibited, and, indeed, all kinds of exertion, horse-exercise more particularly: for none is more prejudicial in stricture than this, for reasons sufficiently obvious. The period during which the instrument can be retained, varies; sometimes I have left it in several hours, and even a day and night, with impunity, and great benefit has followed; at other times, notwithstanding that the irritation excited was not considerable, I have regretted that I did not withdraw it in a few minutes. In truth, it is often a matter of experiment, since the degree of irritation at the time is not always precisely indicative of that which is to follow. The best general direction that can be given is, to allow the instrument to remain longer at each succeeding application; and to direct the patient to withdraw

it the instant that he feels any particular uneasiness. The catheter, however, need not be retained more than twenty-four hours, as no particular advantage is derived from leaving it permanently in; and we certainly run the risk of increasing irritation, besides rendering the treatment much more painful. In France, strictures are very generally treated by leaving an elastic catheter constantly in the bladder; and, in those cases which I saw, the patients were confined to their beds. But I should not be disposed to follow the examples of the French surgeons, in this particular; first, for the reason above stated, with reference to the increase of suffering; and, secondly, because it is quite unnecessary. The next point, in connexion with the treatment of the long and old stricture, is, the greater or less rapidity with which the size of the catheter should be increased. This cannot be accomplished in too gradual a manner; for, although the stricture will often admit a size larger than the last employed, I have found that it is not always expedient to employ it. This observation, however, refers especially to that period of the case when we are using the larger sizes; I mean, from about No. 8 onwards. To this point we may generally introduce a larger catheter at each visit; but afterwards, I have frequently found it expedient to introduce the same instrument twice or thrice, before the next in the scale is employed. The cases, however, vary much in severity; and it is only

where a very great change, as I believe, has occurred in the mucous membrane, that the increase of the instrument requires the caution above implied. Should the surgeon in a case of this kind be unable to introduce any instrument, it would be right to give the caustics a trial; for, although they are not applied to the whole stricture, they may remove its anterior surface on the one hand, or diminish its irritability on the other, according as the kali or argenti nitras be employed. Generally, however, they are productive of little advantage; and where they fail, it may be necessary to divide the stricture by an operation, of which I shall speak more fully in a subsequent chapter.

CHAPTER X.

RETENTION OF URINE.

THE various causes giving rise to retention of urine might be divided into those which depend on the anatomical connexions of the urinary organs, and those which result from some peculiar condition of the organs themselves. When retention occurs from causes included in the last named division, it may result from a loss of power in the bladder to expel its contents, or from some obstacle impeding their exit when that power is exerted. The complete account of retention of urine would, obviously, involve considerations foreign to the object of this treatise; wherefore, I shall only speak of it as occurring in consequence of stricture. There is no point in connexion with the treatment of stricture that is more important, than the retention of urine by which it is occasionally accompanied; the first introduction to a patient frequently takes place at a time when he is labouring under this afflicting malady, and it is still further necessary that the surgeon should have well considered the most judicious means by which it may be relieved, because

he occasionally produces it himself by the application of caustic to the stricture. In either case the cause is easily detected : for by inquiry we are informed that the patient has long been subject to greater or less difficulty in micturition, and, in short, that he has had, more or less plainly, the usual symptoms of stricture. It must be observed here, however, that although this observation applies very extensively, it is not absolutely without exception. A patient with stricture is never safe from retention of urine ; for, however slight the stricture may be, or however little progress the symptoms may have made, it is possible that if the irritation in the urethra be suddenly increased, retention of urine may be the consequence. This may, of course, be effected in various ways; the most frequent, however, are long journeys on horseback, immoderate indulgence in sexual intercourse, or excessive drinking. The symptoms of retention of urine, when it occurs under any of the circumstances above mentioned, in their general character differ but little, varying, however, in their severity. The distress experienced in consequence of the inability to make water, is very considerable; the inclination to do so being constant. If, during the frequent and painful efforts to evacuate the bladder, a few drops of urine be expelled, their exit is attended rather by an increase than diminution of suffering, in consequence of the highly sensitive condition of the canal. There is pain in the region of the bladder, which

viscus may be distinctly felt, forming a hard circumscribed tumour in the hypogastric region, sometimes extending to the umbilicus; it is also tender on pressure. In some cases the pain extends to the loins and front of the thighs, and is accompanied by a sensation of sickness; the pulse varies considerably in different cases; sometimes it is hard and wiry, more frequently, however, it is increased in strength, fulness, and frequency; the tongue becomes furred, there is thirst, and, indeed, the ordinary symptoms of pyrexia. The means, by which we endeavour to relieve retention of urine, have for their immediate object the removal of local irritation, and production of general lassitude. If no success attends the accomplishment of these objects, an attempt is made to draw off the water by the introduction of the catheter: the last named measure seems, at first, so immediately calculated to effect our object, that it is too common to find surgeons, when called to a case of retention of urine, thinking of little else than the introduction of the catheter; and in instances where other means are thought of, this frequently precedes their employment. There is no doubt that occasionally the urine may, in this way, be at once evacuated; but to recommend it as a general practice appears to me very absurd, and argues a very superficial consideration of the causes on which the malady depends. The obstruction to the flow of urine is seldom so perfect, but that a

few drops occasionally are allowed to pass; and if it be so, it does not result from the absolute closure of the canal by the increase of the stricture, but from the irritation and spasm by which it is affected. What then can be more irrational than the immediate attempt to introduce an instrument, which is never accomplished even in health, without the production of more or less of these consequences? But, it may be asked, do the results of practice accord with the suggestions of reason on this point? I should confidently answer in the affirmative. Every one knows, that a practised hand may, in some cases, at once succeed in drawing off the urine; but, in the majority of these cases, I verily believe, that had the proper measures been employed, no instrument would have been necessary. As far as I have seen, the untimely attempt to introduce an instrument in severe cases of retention of urine, has not only been uniformly unsuccessful, but has very much increased the irritation on which the retention depends, and rendered the introduction of an instrument at the proper period, infinitely more difficult, and, in some cases, impossible. I have seen many cases where no instrument could be introduced, relieved by the judicious application of means presently to be mentioned. It is difficult to see any reason for the practice which I have endeavoured to reprobate, since there is no danger in waiting two or three hours, which will be sufficient for the institution of the proper practice.

The bladder will contain a large quantity of urine:* it may ascend as high as the umbilicus, and yet no instrument be necessary for its evacuation. I should not have said so much on the early introduction of the catheter, had I not known that this injudicious practice is still pursued by men who are otherwise intelligent practitioners. Nothing is more easy than to learn the catalogue of remedies for any individual disease, but that which constitutes good surgery is the knowledge of the particular periods at which they should be successively employed. Returning, then, to the indications and the proper means for their fulfilment, I proceed to describe the treatment; and first of the removal of local irritation. The application of leeches to the perineum is very useful in attaining this object; and, as the warm bath should always be administered, the leeches may be applied whilst the bath is being prepared: ten or twelve leeches is the number I usually employ. As the warm bath cannot be procured on all occasions, the semicupium may be substituted, and while the patient is sitting in it, he should be kept warm by blankets thrown around him. The degree of heat should be about ninety-five degrees, which is not more than comfortable warmth. General bloodletting is occasionally recommended, and in full robust habits eighteen or twenty ounces may be abstracted

* Sabatier has recorded a case in which the bladder contained eighteen pints of urine.—See Médecine Opératoire.

with advantage. Usually, however, this is an expensive remedy as regards the general system, and the local advantage derived is as easily procured by other remedies. It is of great consequence to procure speedy and copious evacuations from the bowels; indeed, no point is of greater importance. I have seen many instances where obtaining these produced immediate relief, in which all the other remedies had been unsuccessfully employed. Nor can we be surprised at this when we consider the sympathy that exists between the lower portion of the alimentary canal and the urinary organs.

In administering purgatives in these cases, it is better to give a full dose at once, as our object is to procure their operation as speedily as possible; and for the same reason I prefer calomel and jalap (in the proportion of three grains of the former with a scruple of the latter) to any other medicine. At the same time enemata, composed of thin gruel and castor oil, may be used with advantage. Opium is recommended in cases of retention of urine, in consequence of its allaying irritation and excitement. I am no great advocate for its employment; because, firstly, it interferes with the action of the purgative; and, secondly, the same effect can be produced by other means which are not liable to the same objection. I now allude particularly to the antimonium tartarizatum: and although the aforementioned observation is not strictly correct (inasmuch as the effects of opium and antim. tart.

are not identical), yet those resulting from the use of the latter are much more beneficial. This has to me appeared a valuable medicine in all cases, either where not a drop of urine can be expelled, or, as occasionally happens, where a little dribbling follows the administration of the other remedies, and the introduction of the catheter be still found impracticable.

All the effects produced by the antimonium tartarizatum have an advantageous tendency. It produces lassitude; and although absolute sickness is to be avoided, yet, should it occur, the prostration of strength will be more considerable. The profuse diaphoresis which it occasionally produces is also desirable; since the secretion of urine usually goes on much less rapidly; and thus the bladder will not be so readily refilled, should any urine be dribbling away, or, if otherwise, the quantity which it contains will not be so likely to receive any addition. The manner in which I have usually given the antim. tartar. has been in warm water, in the proportion of about the half of a grain every twenty minutes or half hour. The quantity, however, has varied considerably; that which I have mentioned is the average. I have sometimes given it with the calomel and jalap, but usually have allowed a little time to elapse between, for fear of producing sickness.

Should the foregoing plans prove unsuccessful, the surgeon should endeavour to introduce an in-

strument. On this occasion the silver or varnished catheter may be used indifferently: I have generally employed the latter, because it has appeared to produce less irritation than the silver instrument. The size of the catheter will, of course, necessarily be small; yet, as it is impossible to know how much of the contraction depends on irritation, it is desirable to use as large an instrument as the stricture is capable of admitting. For this purpose the magnitude of the instrument employed should be determined by the volume which the patient describes his stream to have ordinarily been before the attack of retention. As the urethra is always in a highly sensitive and irritable condition, it is essential that the greatest gentleness should be observed. With regard to the mode of introducing the catheter, I have little to add to that which has been said before. If, however, after we have arrived at the stricture, the instrument be impeded, it should be remembered, that it is of great consequence to pass the point into the stricture, so that the eye of the catheter, as it is termed, be beyond the obstruction. In a case where I was fortunate enough to accomplish this, the puncture of the bladder was certainly prevented; all the usual remedies had been employed, the symptoms were very severe, and the instruments for opening the bladder were in the room; when, previously to withdrawing the catheter, I gave it a kind of rotary motion, compared by the French to that usually given to a

gimblet, urging it gently forwards at the same time: it now passed about the fifth of an inch further, and the urine instantly began to dribble away. In this case the bladder had lost its power from over-distension; and a great deal of trouble was necessary to evacuate it, by pressure in the hypogastric region, which, however, was eventually accomplished. In some cases, passing the point into the stricture, and thus opening it, as it were, is successful, the urine flowing immediately that the catheter is withdrawn. In all cases, when the urine is evacuated, the most rigorous adoption of all measures calculated to prevent the recurrence of irritation should be enjoined; the patient being confined to his bed, the warmth of which is highly beneficial. The consequences of retention of urine, where it is not relieved by these remedies, or puncturing the bladder, will be presently described.

In conclusion, I must say a few words on the use of tobacco, which has been recommended for the relief of this complaint. Mr. Earle has written a paper, in the sixth volume of the Medico-Chirurgical Transactions, extolling its efficacy, and indeed giving examples of its successful administration. The well-known effect of this poison, when given in clyster, is certainly in conformity with those which we wish to produce by other means; how far its use may supersede that of remedies more commonly employed, when its powerful and occasionally alarming effects are considered, my experience does

not enable me to determine. Its superior advantages ought certainly to be well attested by repeated trials, before it can be employed in common with the measures usually recommended. I certainly have seen it successful in one case; but in candour it must be observed that, in this instance, the usual practice had not been fairly tried. My present impression, however, is, that the tobacco should be tried only where all other plans have failed, and where we have no other resource left than puncturing the bladder.

CHAPTER XI.

OF ABSCESSES AND FISTULÆ IN PERINEO, &c.

Abscesses in perineo are either simple or urinary.* The former appear to result from the irritation in the urethra being communicated to the surrounding fat, or cellular tissue, and there producing inflammation. Thus, matter may form in connexion with irritable urethra without stricture. When this happens, the abscess is simple in the majority of cases; but I think there are exceptions. I had recently under my care a young man with a urinary fistula in perineo, in whom examination of the urethra did not discover the slightest vestige of stricture. It might be said, that in this case the ulceration of the urethra had included the stricture; and this might certainly have happened, but I am rather disposed to the opposite opinion, because he never had any symptoms of that complaint. Irritable urethra will induce symptoms and consequences almost as multiform and varied as stricture; and, indeed, many of those by which the latter is accompanied

* I mean that they may either contain pus alone, or both urine and pus.

do not result so much from the mechanical obstruction it occasions, as from the irritable state of the canal with which it is connected. As a further illustration of this view, I may mention, that we frequently meet with sores on the penis, which are rendered exceedingly obstinate by a co-existing irritable condition of the urethra. There can be little doubt that they are the consequence of this state of the canal; since it is immaterial, in a practical point of view, whether they are directly produced by the disorder of the urethra, or indirectly in consequence of an increased susceptibility of the affected parts, depending on their sympathy with the urinary canal. I have endeavoured, by repeated and accurate observation, to ascertain if there was any particular character by which sores thus occurring could be distinguished from the various and dissimilar ulcers which are occasionally seen on the penis. I am sorry to add, however, that my endeavours have proved unsuccessful; for the characters of them have varied in so many points, that I cannot point out any practical directions by which they may be recognised with certainty. The only circumstance in which they have resembled each other is, that they have been in my experience always superficial, and do not deepen like many others which occur on the genital organs. From the syphilitic ulcer they may, indeed, be readily enough distinguished, even by their negative characters; not possessing one of those which

especially characterise the specific sore.* The means by which we are most readily made acquainted with the cause on which they depend, are drawn from the history of the case; for, although they so readily get well on our relieving the irritation in the urethra, this is so essential a condition to their removal, that it is always exceedingly difficult, and, in general, impossible to effect it on any other terms.

Returning, however, from this digression to the more immediate object of this chapter, it should be observed, that abscesses may occur at any period of stricture; though it must be confessed, that they more commonly happen at an advanced stage of the disease. The difficulty in voiding the urine, and the irritation by which it is accompanied, produce ulceration of the urethra, and generally posterior to the stricture. The urine consequently becomes effused into one or other of the situations mentioned in chap. 4, but most frequently into the cellular tissue of the scrotum and perineum. Whatever be the situation, the presence of this irritating fluid, in parts not designed to be in contact with it, is productive of violent inflammation and sloughing. If the case be neglected, the skin speedily becomes affected by these processes, assumes a livid dusky-

* The reader will understand that I only here speak from what I have myself seen. I would have entered more fully into the consideration of this subject, had not the observations which Mr. Abernethy has published, rendered it unnecessary. Mr. A.'s works are so universally read, that I need scarcely refer to the first volume, article — Diseases of the Urethra.

red colour, and, on its sloughing, an exceedingly fetid mixture of pus, urine, and sloughy cellular tissue, sometimes discoloured by a little blood, is discharged. The extent of the mischief may be, however, much limited, if the surgeon is a judicious practitioner. A moment's consideration will shew him, that urine, effused into such a quantity of fat, cellular tissue, and aponeurotic fibres, as exist between the integuments and deep-seated parts in the perineum, must inevitably produce the consequences above described. It is obvious, that the effect of these consequences must cruelly and unnecessarily prolong the sufferings, and delay the recovery of the patient. The instant, then, that urine is known to be effused, it should be discharged by a free incision; in executing which, boldness is occasionally as necessary as promptitude. In the generality of cases, it is true, the extension of inflammation is so rapid, that the extravasation is discoverable by the appearance of the skin which I have mentioned. In some instances, the only external indication consists of a slight tumefaction in the perineum. This may result from the unusual quantity of fat, &c. in the perineum, or perhaps from the opening in the urethra being of small size, and the quantity of urine effused less considerable. The swollen part however, is very tender, and the extravasation of the urine is further evinced by deep-seated pain in the perineum. This is increased by any

attempt to make water; very little, and sometimes none at all, passing by the natural channel. By attention to these circumstances, the surgeon will rarely make a cut unnecessarily; but if, in an obscure case, he should happen unfortunately to do so, it is incalculably of less consequence than hazarding the results which must necessarily follow on the confinement of the urine in its unnatural situation. In this case it will sometimes be necessary to go the depth of a common abscess lancet before the contained matters are evacuated. Should pus only be let out, it fully warrants the practice, which in this respect does not differ. I am here prepared for a difference of opinion, because abscesses have sometimes formed in perineo, and again dispersed; but we cannot in general hope for any such favourable result. When the urine, pus, &c. has been evacuated, the patient should be kept perfectly quiet, and a large poultice applied to the part affected. The most prompt and judicious treatment will not always prevent the abscess from terminating in fistula, since the cause of both is to be found in the stricture. Sometimes the urine becomes infiltrated into other situations; more abscesses form, thus giving rise to other fistulæ. In this state of things the condition of the patient is truly deplorable. The pain, whenever he makes water, is at first distressing; and even when, from the duration and subsequent alterations in the structure of the fistulous tracks, it

becomes less considerable, he is constantly annoyed by the whole or greater part of the urine being voided through the newly-formed passages. The treatment by which he is to be relieved is obvious. Nature has always a tendency to assist us in relieving diseases, provided those circumstances which have a direct influence in retarding her salutary operations are removed. Even where this cannot be, or is not accomplished, some change in general is wrought, contributory to the comfort of the individual. This may be illustrated by those which occur in old fistulæ, where the urine passes through a canal, in a degree defended by a secreting membrane. The treatment then consists in removing the stricture; for, in proportion as we restore the canal of the urethra to its natural condition, so will the urine (passing where it meets with the least resistance) flow through the natural passage, and the fistula become closed. In those instances which have occurred in connexion with absolute retention of urine, or in which the stricture is exceedingly contracted, the small varnished catheter will at first be particularly useful. The French manufacture these instruments in general of a much smaller size than the instrument makers in this country; they were also much better; but of late the English catheters have been much improved, and may, I believe, be procured equally small if ordered. In public institutions, however, the expense of them is an object, wherefore to those

who may be interested, I may observe, that the French catheters may be procured very good at M. La Fond's, 46, Rue Richelieu, and may be obtained thence by letter, on paying an *ad valorem* duty on their arrival in London.

In employing a very fine catheter, if a stilette be used (and it will generally be necessary), care should be taken that it be not too large, otherwise the eye of the instrument, as it is called, will be broken. Having introduced a catheter into the bladder, a question arises as to whether it is better to allow it to remain, or introduce it again at intervals: practitioners have differed on this point; some conceiving that the permanent residence of an instrument presented a greater security from the urine passing through the ulcerated aperture in the urethra; while others have thought that the irritation resulting from the constant presence of the instrument, is exceedingly prejudicial. In France the former plan is, I believe, almost exclusively adopted; in this country both are occasionally employed. The fact is, that there are cases in which one or other plan will succeed. As to my own opinion, I confess that, in the majority of cases, I consider the permanent residence of the catheter unnecessary, and, as it always produces greater or less irritation, therefore prejudicial. But as we ought always to remember that the urine will pass where it meets with the least resistance, I believe that occasionally it may be better to allow the

instrument to remain until the stricture has been in a degree removed. The cases to which I allude, are those in which the smallest instrument is passed with difficulty; and in these, the escape of the urine through the ulcerated aperture will be certainly rendered less probable by its always having a ready outlet by the catheter. As soon as the urethra, however, is rendered capable of admitting even a moderate sized instrument, I should certainly not allow it to remain, as I am convinced that the irritation it produces, is unfavourable to the healing either of the urethra or the fistula. As to the rapidity with which the size of the catheter should be increased whilst any is allowed to remain in the canal, it will vary with the kind of degree of stricture. The facility, however, with which this may be accomplished, and consequently the period at which it may be proper, will usually be indicated by a small quantity of urine escaping by the side at the same time that it is passing through the tube of the instrument. Formerly surgeons used to divide fistulæ in perineo, but in those which occur with stricture this division is useless and unnecessary; unless, indeed, it be a case in which the stricture be included in such division; and of the division of stricture, I shall presently speak more particularly. It may happen that in unhealthy subjects even simply purulent abscesses may form sinuses, and if they do, and are intractable by other means, there is no objection to their being divided; but this is

altogether a different case from the fistulæ which I have been considering: in these, the cause essentially resides in the stricture, and on its removal, however accomplished, must the healing of fistulæ depend.

Before I dismiss the consideration of the consequences of stricture, it may be proper to say a few words on the treatment required, when this complaint has given rise to either inflammation or enlargement of the testis or hydrocele, or where the former has resulted from the temporary increase of irritation produced by the instrument. Both of these affections, as has already been observed, may equally result from an irritable condition of the urethra. With regard to the first, rest should be enjoined, the part well supported and covered with a tepid bread and water poultice; this is in general far more beneficial than any cold application. Many surgeons apply leeches, and if the inflammation be vehement, there can be no possible objection to them: they do not, however, produce in general the benefit which might be expected, since they do not remove the cause on which the inflammation depends. There is no necessity for relinquishing altogether the use of the bougie during the time that the testicle is affected: its employment should, however, be repeated less frequently and with more caution, as to the observance of absolute rest and every other measure calculated to prevent or remove undue irritation. As to

hydrocele, there are so many cases in which the removal of the stricture is accompanied by that of the hydrocele, that any measures especially directed to the latter complaint should be postponed until the stricture is removed.

CHAPTER XII.

ON THE REMOVAL OF STRICTURES BY INCISION.

STRICTURES have a natural tendency to increase, and we occasionally meet with cases where a period of some years has been allowed to elapse before any efficient means are employed for their removal. The urethra, under such circumstances, occasionally becomes so contracted that the urine scarcely ever passes otherwise than guttatim, and the change of structure which has been wrought in the mucous membrane of the canal is so considerable, that the removal of the stricture by any of the means heretofore mentioned, is rendered impossible. A patient who is afflicted in the manner above described, is in a truly pitiable condition. The constant straining and irritation, the repeated threatenings of absolute retention of urine, and not infrequently the actual occurrence of this malady, renders it highly desirable that some effectual means should be had recourse to for the alleviation of his sufferings. If a surgeon do not effect this, he may justly fear that his patient, worn out by pain, irritation, and accumulated sufferings, will

sink under their united influence. Surgery, however, here offers resources, which if judiciously applied, lead frequently to the happiest results. In those cases the surgeon must adopt one of three plans: he must endeavour to overcome the stricture by forcing an instrument through it; secondly, he must wait until retention of urine takes place, and puncture the bladder; or thirdly, cut down to, and at once divide the stricture, and then introduce an instrument into the bladder.

With regard to the first-named plan, I have nothing to add to that which I have before observed in Chapter V.; for the reasons there given, I never would attempt a practice (as it appears to me) so unscientific, and so fraught with danger of increasing my patient's calamities. As to the second plan, I am persuaded that there are very few surgeons who would now feel satisfied with so dilatory a mode of practice; or with deferring the division of the stricture, should they ultimately contemplate doing so, if the patient was labouring under the symptoms to which I have just alluded. The postponement of the operation is attended with many disadvantages; it is well known, that in cases of stricture the whole of the urinary organs generally become sooner or later diseased if the stricture has been neglected, and the degree of disease will of course be generally proportionate to the duration of the primary complaint. In addition to this, the health of the patient suffers

so much from the constant irritation, that he is every day getting into a condition exceedingly unfavourable to the success of any operation whatever. The puncture of the bladder is certainly occasionally necessary in stricture, because it is in some cases impossible to obtain the conditions which prudence requires in performing the division of the contracted portion of the urethra; and if these be not attended to, an operation, highly useful when performed under proper auspices, might be abandoned merely from its abuse. The case in which I would divide a stricture would be one in which the previous history had given me accurate means of judging of the situation and extent of the contraction. Where I had reason to believe that the bladder was not diseased, and where the proper application of the remedies mentioned in this treatise had failed in procuring relief; in such a case, the operation has the twofold advantage of relieving the patient from considerable suffering, and at the same time effectually removing the complaint from which it has arisen.

Mr. Hunter divided strictures; he seems, however, to have confined the operation to cases where false passages had formed, or where the urethra had ulcerated posterior to the stricture, and urine become effused into the fat and cellular tissue of the surrounding parts: in the former case abstractedly considered, the operation will, I believe, seldom be necessary; and it is highly desirable to

avoid the latter occurrence, which in cases where the division is necessary, may, I should think, be generally anticipated. This operation has been lately revived, and I scarcely know to whom we are indebted for it. The first patient thus treated that I saw or heard of, was one in which the operation was performed by Mr. Stanley; who has since repeated it, with, I believe, uniform success. Mr. Shaw, of Windmill Street, however, appears to have been performing similar operations about the same period; for which I refer the reader to the twelfth volume of the Medico Chirurgical Transactions, — and they have now been repeated by other surgeons. The results afforded are highly encouraging, and will probably lead to a more extensive application of this mode of practice than I feel at present warranted in recommending. To a surgeon familiar with the anatomy of the parts, (and no other ought to undertake any operation,) the division of a stricture is easily accomplished, with an exception to which I shall presently allude. The manner in which the operation is executed differs but little, and I shall therefore describe it as I have myself seen it performed. The patient should be secured in the same manner as for the lateral operation of lithotomy. The operator first passes a grooved staff down to the point of obstruction, in which situation it is to be securely held by an assistant: the surgeon now cuts down from the external parts

to the point of the instrument; and having accomplished this, he continues his incision through the stricture.

The next object is to convey an instrument through the posterior part of the wound into the bladder; for which purpose the grooved staff should be withdrawn, and an elastic gum catheter introduced in its place. Now the only difficulty which I have seen, consists in finding the urethra from the wound; indeed it has, in some cases, contracted so much as to render the employment of a probe necessary in order to discover it. For this purpose ordinarily you require another instrument, to enable you to direct its point to any part of the wound you may wish with facility. But then you have two instruments, the one introduced to the point of stricture, the other from the wound into the bladder. This it is desirable to avoid, since it is inconvenient to the patient, and of course retards his recovery; which cannot, indeed, take place until one instrument is passed through the whole track of the canal. In order to meet this objection, the surgeon should be provided with a long elastic gum tube, at least twice the length of the ordinary catheter: for then he can draw so considerable a portion of it through, from the anterior part of the canal, as will enable him to turn round the point and direct it to any part of the wound, in his endeavours to find the urethra, with the same facility as if he were employing a separate instrument. Having passed

the catheter onwards to the bladder, the surgeon should then withdraw so much of its length through the glans penis, as only to leave that ordinarily given to catheters in the canal, and cut off the superfluous portion.* It is right to leave the instrument in the canal for several days at least, in order that the parts may have every opportunity of healing over as quickly as possible. If it be withdrawn at an earlier period, considerable difficulty may be experienced in again introducing it into the bladder. In one case the catheter remained three weeks without any particular inconvenience; in general, however, it would hardly be prudent to allow it to remain so long a period, as it might become so encrusted with sabulous or calculous matter, as to render its removal difficult or painful. The after treatment must, of course, be regulated by circumstances. If no particular irritation supervenes, absolute rest, a low diet, and keeping the bowels, regular will be sufficient; and the lighter the local applications the better, simple dressing alone being requisite. If, on the contrary, the irritation prove considerable, its removal must be attempted by active local depletion, by warm baths and opiates; since it is highly desirable to avoid

* Should the surgeon not be provided with an instrument of this kind, he must allow the catheter introduced by the wound to remain for a few days. The urethra will now be so much more easily discoverable, that an ordinary catheter may be passed through the whole canal without difficulty.

withdrawing the instrument, if possible. The exception I before alluded to, as rendering this operation difficult, is where the fat, cellular tissue, &c., in the perineum and its vicinity, are much thickened and diseased by the previous occurrence of abscesses and fistulæ in perineo. In an individual so situated, the parts would have become so changed in structure and appearance, that the most expert anatomist might be foiled in his attempts to discover the urethra; as, indeed, is reported to have happened to Dessault. I have thus stated as much as I feel warranted in doing on the incision of stricture: although it is not, strictly speaking, a new operation, we still want additional cases in order to enable us to limit its performance with accuracy. My present impression is, that it will in time be performed much more frequently than it has hitherto been done; and in many cases supersede a long course of treatment by bougies, catheters, caustics, or other remedies, which, although ultimately successful, are frequently as painful and annoying to the patient, as they consequently are distressing to the surgeon.

CHAPTER XIII.

ON STRICTURE IN THE FEMALE.

STRICTURES in women are by far less frequent than in men. This comparative infrequency is, I think, very intelligible. Mr. Hunter has very truly observed, that in proportion as an organ has a complexity of function to execute, so is it liable to disease. Now the office performed by the urethra in the female is simple, being confined to that of giving exit to the urine from the bladder; whilst that of the male assists in the execution of both the urinary and generative functions. It is thus exposed to a great many additional sources of excitement; and, by its intimate connexion with both sets of organs, its sympathies are proportionably extensive. Independent, therefore, of causes which exert a direct influence on the male urethra, it is subject to the indirect influence of many others, from which the female is altogether exempt. Further it may be observed, that the structure and sensibility of the male and female urethra is different: the latter is much shorter and wider than the former, and ordinarily endowed with much less sensibility. It also admits of considerable dilatation

with facility, which accounts for any contraction being so much more readily removed than it is in the male subject. The symptoms in those cases of stricture in the female which have fallen under my observation, have been very similar to those met with in men, except that they have not been so numerous or complicated; on the contrary, they wholly consisted of the frequent desire to make water, the difficulty in executing this function, and the distress necessarily consequent on these circumstances. The history of the cases has nothing very remarkable with regard to the treatment of them; I believe the removal of the stricture may be effected easily by dilatation, nor have I ever found it necessary to employ any other plan of operation.

Case. — I was sent for to a married woman, when she was labouring under retention of urine. As I was not at home at the time, some hours elapsed before I saw her; in the interval another practitioner had been called in, and had in vain endeavoured to introduce the catheter. The attempt was productive of considerable suffering, and the patient would not allow of its being repeated at that time. She gave me the following account of her complaint: About four years previously she had been affected by a discharge from the vagina, attended with considerable pain in micturition; that on the subsidence of these symptoms she considered herself well, except that the urine did

not flow quite so freely as formerly. The inconvenience she sustained was, however, very inconsiderable until about three months previous to her present attack of retention. From that time, however, her micturition had gradually become more difficult; it was also exceedingly frequent and attended with some uneasiness. Of late she has been obliged to rise six or seven times in the night to make water: the difficulty, though it varied, being always considerable. Although the catheter had not passed, as I before observed, it seemed to have been productive of some advantage, as the urine was dribbling away, though only by drops. The usual remedies were therefore ordered, and I saw her again early in the morning. The warm bath, &c., had been beneficial, a considerable quantity of urine having passed. The bladder, however, was still felt distended. On endeavouring to introduce the catheter, the membrane over the meatus was found to be considerably thickened and plicated: and this change was continued a short distance within the vagina; nothing like a distinct meatus could be observed. On passing the instrument between the folds of the membrane formed in the situation of the orifice of the urethra, it entered easily to the extent of an inch; and examination by the finger in the vagina clearly shewed that the catheter was in the urethra. All my endeavours, however, to introduce it into the bladder proved fruitless at this time; and I was therefore obliged to

be content with exerting a certain degree of pressure on the stricture. The point of the catheter became so firmly embraced that I was enabled to secure it in this situation, and desired the patient to allow it to remain there, if its presence was at all tolerable. The warm bath, or rather semicupium, was ordered to be repeated. The following day I again visited the patient; I found that she had only been able to endure the presence of the instrument half an hour; but the urine had since flowed more freely, and she was much more comfortable. I now succeeded in passing a small metallic sound without much difficulty, and the irritation it excited was very inconsiderable. My next four visits were repeated every other day; and at each I increased the size of the instrument, with one exception, when I was obliged to be content with introducing one of the same size as had been previously employed; the patient had become quite easy. Before the time appointed for my next seeing her arrived, I was sent for, as she again laboured under retention; she had been half an hour in a semicupium when I arrived; and as the bowels were freely open, I at once attempted and succeeded in the introduction of a fine French catheter; the parts, however, were exceedingly irritable. I should have imagined that this attack of irritation was consequent on the too frequent use of the instrument, had it excited any particular irritation; but I am convinced that this was referable to other causes. I may here observe,

that I should not have repeated the instrument so often but in consideration of the comparative small degree of sensibility which exists in the female urethra. The following day I found her quite comfortable, and advised her to avoid all sources of excitement, particularly that on which I conceived the present attack of irritation to depend. From this period the case went on favourably; the stream of urine gradually acquired its usual volume, and the frequency of micturition no longer existed; the size of the catheter was increased every second or third day, until a full-sized instrument entered the bladder with facility, when she felt herself perfectly well. This is now more than a year since, and I understand she has had no return of the complaint.

CASE I.

Irritable Urethra.

A GENTLEMAN, aged forty, applied to me, the latter end of the year 1819, for the relief of involuntary emissions. He had been much troubled with them some months previous to his application, and had on that occasion consulted a physician in the country. The plan employed by this gentleman, consisted of the cold bath, and the internal administration of bark, steel, and such remedies as are usually considered calculated to give strength.

The benefit he derived from this treatment was, however, very inconsiderable, the emissions became less frequent, but never entirely left him; and at the time he applied to me, they were as frequent as ever. He now seldom passed a night without being awoke by a discharge of semen; his general health appeared very good, but on enquiring, he had the following symptoms: — Although there was no diminution in the volume of his stream in micturition, this was more frequent than natural. He seldom passed a night without being obliged to rise once; there was slight dribbling on his shirt after making water. His bowels were regular, but the evacuations were always accompanied by an uneasy sensation about the rectum. These symptoms induced me to suspect that his urethra was irritable; and as the involuntary emissions constituted the leading feature of the case, I thought it probable that the prostatic portion of the canal was especially affected. I communicated my sentiments to him, and proposed to examine his urethra; to which, after some hesitation, he consented. A large elastic gum bougie was introduced, and although he had never had any instrument passed before, he did not complain at all during its passage through that part of the canal anterior to the prostate. On the instrument reaching this situation, he became very uneasy, complained of heat, had a strong desire to make water, requested me to withdraw the instrument with great earnestness, and, in short, was

exactly in that state which is so admirably described by Mr. Abernethy. As there was nothing obviously wrong in his general health, he was merely ordered leeches to the perineum, to take an aperient medicine occasionally, with a pill of the extract of hyoscyamus and poppy, three grains of the former and two of the latter every night; and desired to call again in a week. During this period, he had only two involuntary emissions. As the pill seemed to render the bowels rather costive, it was discontinued, and he was directed to be very careful in his diet, to confine himself to plain boiled food, and to refrain from wine and spirits. The next time I saw him the instrument was again introduced, and the irritation produced by its passage through the prostatic urethra, much less than at the former visit. Another week having elapsed, I again saw him: the improvement had not been progressive, as he had been thrice troubled during this interval with involuntary emissions. As these, however, were subsequent to a dinner party which he had attended in this interval, I simply passed a bougie, and recommended the continuance of the former measures. At the next visit he was much better, although he had been once awoke in the night by a feeling of irritation in the genital organs; no emission of semen, however, having actually occurred: and the irritation at this time from the passage of the instrument was very inconsiderable. From this period no alteration was

made in the treatment, the bougie was introduced a few more times, after intervals of a week, till he complained of no irritation in its passage. The involuntary emissions also entirely left him, and he was dismissed perfectly well. He was under treatment for rather more than two months.

CASE II.

Of Irritable Urethra, where the Morbid Sensibility pervaded the Canal generally.

A young man, æt. twenty-three, was admitted into the Finsbury Dispensary with the following symptoms: About two years previously he had contracted a gonorrhœa, the more urgent symptoms of which complaint had subsided in the usual time. The discharge, however, had continued ever since; and of late had become very annoying, in consequence of a particular kind of uneasiness by which it was accompanied. This extended along the whole course of the canal, and was particularly distressing whenever he made water. His stream was very irregular both as to its shape and volume, and micturition had of late become much more frequent than natural. He was also often annoyed by involuntary nocturnal emissions. The usual remedies for the relief of irritation, &c.; were ordered; and, after the lapse of a week, an attempt made to introduce a moderate-sized bougie. The

instant, however, that its point passed the orifice, he complained of severe pain — nevertheless the instrument proceeded slowly onwards, assisted by very gentle pressure; before, however, it had passed to the extent of five inches, he became sick and so faint that I was obliged to withdraw it. I strongly recommended the rigorous adoption of measures previously ordered, repeated the leeches to the perineum, and kept the bowels freely open by magnes. sulph. in mint water, taken every morning fasting; suppositories were also introduced into the rectum every night. At his next visit I succeeded without difficulty in introducing the bougie into his bladder. The irritation and pain, however, were so considerable, that I only allowed it to remain a few seconds. The introduction was repeated, after the usual intervals, and the metallic bougie used instead of the elastic gum instrument. The size was increased at each introduction of the instrument, until the largest passed with facility; he now felt perfectly well, the discharge, involuntary emissions, and other symptoms having completely disappeared. There was nothing further in this case of particular interest, except that the irritation was by far more considerable than in any other case which has fallen under my observation, where there was no stricture. His health was at first very much disordered, and the strictest attention to every point connected with that part of the treatment especially directed to

the relief of local irritation, was particularly necessary throughout the progress of the case.

CASE III.

Of Irritable Urethra, with Fistula in Perineo.

William Price, æt. twenty-four, applied for relief on account of a scalding sensation in micturition. On enquiry, he makes water very frequently in the day, but is not obliged to rise at all in the night. He is also troubled with involuntary emissions. There is a small aperture in the perineum, through which a portion of his urine is voided whenever he makes water: this has existed about ten weeks. From his description, the stream does not appear to have become much diminished in volume. The usual soothing measures having been premised, and the ordinary interval allowed, a large silver catheter (No. 10) was passed without difficulty into his bladder, but at the same time was productive of considerable pain and irritation. An instrument of increasing size was repassed twice at intervals of a week, and at the latter period the urine had entirely ceased flowing through the fistula. At this time I lost sight of the patient for a fortnight; on his revisiting me, he informed me that he had been unusually busy in his employment as a waiter, had kept very late hours, and that the urine again

flowed through the orifice of the fistula. He was again ordered leeches to the perineum, desired to remain quiet, and to come again in three days. I was now enabled to repass No. 12 without difficulty, but the instrument gave him more pain than at any former period: the leeches were repeated. After another week, I again saw him, the irritation excited by the former instrument continued for nearly three days; it had, however, now entirely subsided, and I introduced No. 13 without difficulty, neither did he experience any particular uneasiness. The urine had again ceased to flow by the perineum. No. 14 was passed twice, after the usual intervals; at which time the orifice in the perineum was completely healed, and the patient otherwise perfectly well.

CASE IV.

Of Sore on the Penis, dependent on an irritable condition of the Urethra.

A YOUNG man, æt. twenty-six, of sedentary habits, applied to me for a sore on the penis. On referring to my notes, I find the following description: A superficial sore having a smooth secreting surface, not deepened by ulceration, and surrounded by an erythematous blush of a crimson colour. He says that he has taken pills by the advice of other practitioners, and applied various local applications

without any benefit; that the sore has existed fifteen months. He complains of uneasiness in making water, and is troubled by involuntary emissions generally thrice a-week. His stream is irregular in volume, and he has occasionally pricking sensations in the testes. His tongue is furred, his appetite deficient, and his bowels torpid, which he has endeavoured to obviate by occasionally taking aperient medicines. The usual remedies were ordered, and the pil. hyd. noct. alt. given as an alterative; equal parts of ung. hydr. nit. mit. and cerat. cetacei recommended as a local application. At the expiration of twelve days he again visited me, and expressed himself as feeling a little better; on enquiry, however, there was no perceptible difference in his symptoms, and the appearance of the sore remained the same. I now introduced a large bougie into the bladder; the urethra was very sensitive, and the instrument was impeded for a second or two at the membranous portion; it however quickly passed on, assisted by very little pressure. The same treatment was ordered to be continued. At his next visit he was much better: the sore had already healed in great part, the stream had become larger and more regular: the involuntary emissions continue, as well as the unpleasant sensations in the testicles; the latter, however, are less troublesome. The introduction of an instrument was now repeated, at the usual intervals; and when it had been passed three times, the sore had

entirely healed. The urethra, however, still retained in a degree its morbid susceptibility, and the involuntary emissions occasionally occurred. The solid metallic sound was now substituted for the elastic bougie, and when it had been introduced six times, all irritability had subsided. The involuntary emissions, however, still returned about every ten days, and as he was very anxious to be relieved from this annoyance, various measures were employed; amongst other medicines he took camphor, laudanum, and hyoscyamus, he had also a seton passed in the perineum. Nothing that was subsequently done, however, seemed to influence the recurrence of the involuntary emissions, which returned at intervals. As he had no other inconvenience remaining, and as his health was evidently still disordered, he was recommended to go into the country. I have since seen him, and learnt that this was highly beneficial; but that, although the intervals are much longer, he is not altogether exempt from occasional returns of his old complaint.

I have been induced to mention this case, in consequence of the young man having described his anxiety on account of his complaint, to result from the circumstance of his having taken so much medicine and applied so many local remedies, without the least influence having been produced on the sore.

CASE V.

THE following is a good specimen of an ordinary case. It however shews, that the symptoms may be very severe where the contraction is not very considerable.

George Clark, æt. fifty-five, admitted with the ordinary symptoms of stricture, which commenced about two years ago with a trifling difficulty in voiding his urine. His greatest annoyance, however, results from the straining which accompanies micturition, and the great frequency of his calls to make water, being obliged to execute this function almost every hour. It is only during the day, however, that this irritability of the bladder is so remarkable; for although he is obliged to rise so frequently in the night as to interfere with and sometimes destroy his rest, yet micturition is comparatively much less frequent. His tongue is furred, appetite indifferent, and bowels costive. He was directed to employ the usual preparatory measures, and to introduce a suppository the night previous to the morning in which it was proposed to examine his urethra. On again seeing him, the bowels had been freely opened, and the suppository had given him a good night's rest. Regulating the size of the bougie by the considerations I have mentioned, I introduced one of moderate size into the bladder; but it did not readily pass through the membranous portion of the urethra,

its progress being here interrupted by a stricture.

April 7th. — I varied the size of the instrument, and employed the silver catheter. Patient already makes water less frequently.

14*th.* — Urethra would not admit the next size. Stricture was rather sensitive, and bled a little.

21*st.* — Applied kali, after again attempting to introduce the last sized instrument.

28*th.* — I again failed in introducing the instrument, and accordingly re-applied the kali.

May 5th. — Patient is much better. Stream larger, and micturition very much less frequent. I attempted the introduction of a catheter a size larger than the one I had failed to introduce, and it passed into the bladder without much difficulty.

12*th.* — The irritation consequent on the last introduction has been considerable, attended with an increase of difficulty in micturition. It has not yet completely subsided, therefore the repetition of the instrument is deferred. Ordered eight leeches to the perineum, with the continuance of the other measures, and absolute rest enjoined.

15*th.* — The attack of irritation had quite subsided, and the instrument the next in the scale introduced without difficulty.

At his next visit the symptoms were almost entirely relieved. He only rises twice in the night, and scarcely makes water (during the day) more frequently than natural. No further interruption

occurred in the progressive introduction of the larger catheters. No. 14 was introduced thrice, and the patient discharged, perfectly well.

CASE VI.

Of that description in which I employ the Kali Purum.

Anthony De Paer, æt. forty-two, applied for relief at the Finsbury Dispensary, with the following symptoms: — Has great difficulty in making water, attended with a burning sensation along the course of the urethra; his stream is exceedingly small, and micturition very frequent; he is much disturbed at night by the perpetual desire to make water, and when he goes to sleep the urine passes from him without his being conscious of it. His complaints have existed for about two years, during which time they have been gradually increasing in severity. Leeches are ordered to the perineum, his bowels directed to be freely opened by calomel and jalap, fomentations night and morning, suppositories of opium and hyoscyamus introduced at night into the rectum; and he was desired to apply again in a few days. A small elastic gum bougie now passed readily down to the membranous portion of the urethra, where its progress was opposed; on reaching this point the patient complained of acute suffering. The instrument, however, was steadily held for a minute or two against the stricture; the

pressure exerted being very inconsiderable, indeed, not greater than was necessary to keep the point of the bougie fairly in contact with the obstruction. Its further progress, however, being still prevented, it was withdrawn, and a considerable quantity of blood followed its removal. The leeches, &c., were repeated, mild diet recommended, and as much rest as his avocations allowed strictly enjoined. After the lapse of a week, however, his symptoms were but little alleviated, and the same circumstances again occurring on the introduction of an instrument, the kali was applied. The pain experienced was not greater than that felt from the contact of the unarmed instrument. At his next visit, no instrument could be passed into the bladder, and although the pain and hæmorrhage again took place after the removal of the bougie, yet the latter was much less, and the former by no means so considerable. The kali was again applied, and the second application in a few days was followed by a complete subsidence of the unusual sensibility of stricture, and a small bougie was introduced without much difficulty into the bladder. It was necessary to use the kali three times more in the progress of this case; after which period No. 5 could be passed into the bladder, and the symptoms were very much relieved. Nothing after this interfered with the introduction of a larger instrument at each visit, until No. 10 was introduced. At this period the patient felt

himself so completely recovered, that he very imprudently discontinued his attendance, without giving me an opportunity of warning him against the inevitable consequence — the return of the stricture. This is, indeed, too common in dispensary practice, it being difficult to persuade patients that there is any necessity for the continuance of treatment after the symptoms are removed. The first application of this patient was on the 2nd of January; he continued under treatment till March. In the following October I again saw him, and he complained that all his symptoms were nearly as bad as ever; the only exception being that of his urine not passing from him during the night involuntarily. After the employment of the preparatory measures, I succeeded in passing a small catheter into the bladder; I had, however, much difficulty in accomplishing this, although the peculiar sensibility had not returned, but the stricture seemed to be on one side, and the instrument would not pass unless the handle was inclined to the right side of the patient: and even when it did proceed, there was a sort of jerk, as if it passed over a fold of membrane. After the usual interval, I attempted to introduce a larger instrument, which I succeeded in accomplishing, but not without much time and trouble, the same sensations being conveyed by the catheter as on the former visit. Not being able, however, further to increase the size, at the next visit I took an impression preparatory to the ap-

plication of the kali, which impression I am certain resulted from one of those bridles which I have described as occasionally being thrown across the urethra.* The kali was applied, and a piece somewhat larger than a pin's head selected. This application of the kali enabled me, after the usual interval, to introduce a larger instrument without difficulty, but it was necessary to incline the handle to the right side; so that, besides this membranous band, which was probably removed, there was a stricture, the aperture through which was not central. From this period the case went on favourably; the size of the instrument being increased until the largest catheter passed into the bladder with facility.

This is now more than a year ago. I meet the man occasionally in the street, and he informs me he has no return of his complaint.

CASE VII.

Being one of that description in which I recommend the use of the Argenti Nitras.

THE case which I am about to relate, as an in-

* I met with an excellent specimen of this only a few days since, in a man who had been the subject of stricture, but who died of an intussusception combined with other disease in the rectum. On examining the urethra of this individual, I found that the canal was contracted in two situations, and that at one part there was a distinct membranous frænum growing from the mucous membrane across the canal. I may observe, that similar morbid appearances are observed in the trachea of horses commonly called "roarers."

stance where the argenti nitras appeared useful, also shews the plan which we are generally obliged to adopt where there are already two or more strictures. I would observe, that where it is practicable it is always advisable to direct our principal attention to that which is posterior. But in cases where caustic is necessary, this is frequently impracticable, before the greater or less dilatation, or destruction of the anterior one is effected. The latter may allow an instrument to pass three sizes larger than that which the posterior stricture is capable of admitting, and yet we may not be able to pass even the smaller size through it with sufficient celerity to apply the caustic effectually to that which is most remote from the orifice of the canal; wherefore we may be obliged to continue our applications exclusively to the anterior stricture, until this difficulty is removed.

John Miller, æt. thirty-eight, applied to me with the following symptoms: — He makes water more frequently than natural; the frequency is not, however, so distressing as the great straining with which his efforts to void it are accompanied. He cannot, however, hold it even for a few minutes when the desire to void it occurs. There is no pain in micturition. Soothing measures were employed for a few days as usual. On examination I found that he had two inguinal herniæ, and that a very fine bougie could be with difficulty passed into his bladder. On attempting, at the next visit,

to pass a larger instrument, it was stopped by a stricture at about four inches, to which I immediately applied the kali purum. At the next visit, the instrument last used was allowed to pass, with some painstaking, to about the membranous portion of the canal, but could not be introduced further: as the obstruction anteriorly, however, detained the instrument a few seconds, the kali was again applied to this situation. In a few days after this, the bougie passed readily to the posterior stricture; to which kali was twice applied, the intervals being, as usual, a week. A small silver catheter at the subsequent visit was passed into the bladder, and considerable relief followed its introduction; the man expressing himself much more comfortable at the next visit. The successive introduction of silver catheters was now employed in the usual manner, until No. 6 passed pretty freely; No. 7, however, could not be introduced, although kali was applied several times to the posterior stricture, which was the seat of obstruction. I should here observe, that throughout the whole treatment, up to this period and for some little time afterwards, the strictures always felt exceedingly hard, and though as much force was used in endeavouring to procure a passage for the larger instrument as could be safely employed, the man never complained of pain: neither did he on any occasion when the kali purum or argenti nitras was employed. It was at this period of the case that the latter was first used;

two applications of it to the posterior stricture enabled me to pass the larger catheter with great facility. From this time every thing went on favourably until No. 11 had been introduced. The introduction of No. 12, however, was followed by a severe fit of irritation, and a kind of intermittent fever. Rest, with the local soothing remedies, however, relieved him from this, but not till after ten days had elapsed. Each instrument that was subsequently introduced, though the difficulty was by no means considerable, produced a new fit of irritation, for the subduction of which the same measures again became necessary; notwithstanding which I persevered until No. 13 passed with considerable freedom into the bladder, beyond which, as the patient's symptoms were entirely relieved, I did not think it expedient to proceed. He was desired to apply occasionally to have his urethra examined, but, as I have not since heard of him, I conclude he remains well. I believe in this man the membrane of the urethra at the posterior stricture became considerably changed in structure.

CASE IX.

Thomas Youens, æt. twenty-six, was admitted into the Finsbury Dispensary, December 21st, with the following symptoms: — He has great pain in micturition; which is so frequent that he scarcely ever goes more than half an hour without being

obliged to execute that function. Occasionally, however, he can retain his urine for three or four hours, and sleep a whole night without rising once; but more commonly he is obliged to rise five or six times, which annoys him considerably. He has had gonorrhœa, but it was some years since; and he now feels relieved by a discharge from the urethra, which occasionally takes place without any evident cause. His stream is very inconsiderable in volume, and occasionally the urine only flows guttatim. The usual preparatory measures having been employed, his urethra was examined with a fine bougie: which was opposed by a stricture at the orifice of the canal, and could not be introduced beyond this point. The kali purum was applied, which gave him no pain although he was very much disposed to faint during its application. A few minutes after the removal of the instrument he recovered from this feeling.

December 29*th.* — The bougie passes through the situation of the former obstruction, but is opposed by a stricture about half an inch posterior to it. Urethra bled freely, and he was seen again on January 5th, when the kali was re-applied.

January 9*th.* — A small metallic bougie now passed to the extent of about three inches, where its progress was opposed.

12*th.* — The kali purum was again applied to the last-named obstruction.

15*th.* — On examination, the instrument only

passed three inches, no progress appearing to have been made in the removal of the obstruction; in this situation kali was again employed, as also on the 19th.

23d. — The patient is much better since the last application of the caustic; micturition less frequent in the day, and has passed two nights in succession without being obliged to rise once. A small metallic instrument was now passed with great difficulty into the bladder for the first time; during its passage it obviously had to encounter other strictures, — which allowed it, nevertheless, eventually to pass onwards.

The further account of this case in detail, would occupy some pages, and be exceedingly tedious to the reader; I shall, therefore, endeavour to give a short account of it by observing, that great difficulty occurred in increasing the size of the instrument, obstruction being met with sometimes in one situation and at other times in another; wherever the obstruction was, however, there was the caustic applied: the number of applications in all being fifteen. In the course of the treatment, it was found that his urethra was completely beset with strictures; and, although they were not all continuous, yet I have no doubt that the intermediate spaces did not preserve the natural calibre of the canal. This was the most obstinate case I ever met with in so young a man, for he was under treatment about ten months. Indeed, it was more

than a year from the time I first saw him, before he was discharged; but the treatment was interrupted for upwards of two months, by an illness which commenced, as I was informed, by an inflammatory attack of the chest: and for the relief of which, as his residence was very remote from mine, I procured him a letter in another dispensary. The urethra, however, did not appear to have got worse, although, on the first introduction of an instrument, it was highly irritable. About two months before his discharge, an abscess formed in perineo, which I immediately opened; it contained nothing but pus, and the opening healed in a week. This abscess, however, was followed by a remarkable diminution in the irritability of the urethra, which nevertheless still retained in a degree its morbid susceptibility; leeches were frequently employed, as well as all the usual soothing measures, except rest, which he could not always enjoy, in consequence of being obliged occasionally to work for his subsistence. Whenever this did not prevent him, he strictly observed my instruction as to this point, and was otherwise so steady and obedient, that I felt great pleasure in endeavouring to relieve his sufferings. The largest instrument eventually introduced was No. 13, which having been repeated a few times, he was discharged perfectly well. His brother had occasion to call on me about three weeks since, when he informed me that the patient has had no return of his com-

plaints. It is now more than eighteen months since I last saw him.

CASE X.

William Sheppard, æt. fifty, admitted a patient of the Finsbury Dispensary, in 1821, gives the following account of himself: — About twenty-three years ago, he was seized with retention of urine, having at that time a discharge after gonorrhœa. The surgeon of the ship, after many fruitless attempts, at length succeeded in passing an instrument (elastic catheter) into his bladder, which was allowed to remain for six months, being occasionally removed in order to be cleaned. At this period his ship was paid off, and he had a small elastic gum catheter given him with directions to pass it occasionally; but he still made water with difficulty, and sometimes could not do so at all without previously introducing the instrument. In this state he continued for about two years, when by accident he received a blow on the penis whilst in a state of erection. The immediate consequence of this was perfect inability to make water, followed by effusion of urine into the cellular substance of the scrotum and perineum. In this state he procured admittance into an hospital, in London. Two openings were made in the perineum, through which urine and matter were discharged: he now made water easily through

these, but none came through the urethra. In a short time he left the hospital with three fistulous openings through which he voided his urine. Having lived in this miserable condition for a long period, he at length applied to Mr. Whately, from whose care he derived the following advantage: — All the fistulæ healed, and he was enabled to make water in a very small stream through the natural channel. The treatment consisted of injections thrown up the fistulous tracks, and the application of the kali four times to the urethra. He had also small bougies given him, with directions to pass one occasionally. Though now much more comfortable than he had previously been, he was still in a very bad condition: calls to make water were very frequent; the introduction of a bougie was frequently necessary in order to enable him to void it. This he could not always succeed in accomplishing, and when he did, it was never without great difficulty. In this state he was admitted into the Finsbury Dispensary. On examining his urethra, I found that the smallest bougie could not be introduced into his bladder. I succeeded, however, with much difficulty in passing a very fine silver catheter, from which he experienced a little relief. As this man was many months under my care, a detailed account of his treatment would be unnecessarily tedious; I shall, therefore, condense it into as small a compass as I can, by observing, that his urethra was with great difficulty dilated, in the

following manner: — Silver catheters were used, until No. 3 could be introduced into the bladder: in order to accomplish this, it was necessary not to repeat any attempt after a shorter interval than six days, and also to repeat the introduction of one instrument twice or thrice before the introduction of one of larger diameter became necessary. The argenti nitras and kali purum were both repeatedly employed, in order to facilitate the progress of the case, but without advantage. The plan of simple dilatation was therefore alone trusted to, until No. 7 could be passed into the bladder: at this time the caustics were again employed, but again failed in producing any good effect. Up to this period the facility of micturition increased in proportion to the increasing size of the instrument employed. On introducing No. 8, the difficulty in making water returned, and twelve days elapsed before any instrument could again be introduced; and then it was two or three sizes less than that employed at the last visit. Notwithstanding these difficulties, the plan was persevered in until No. 11 was passed into the bladder. Finding, however, at this period, that the introduction of large instruments invariably produced irritation and difficult micturition, and that the largest, the employment of which was attended with benefit, was No. 7, I decided on relinquishing the use of any other. I accordingly gave him a metallic sound of that size, which he continues to pass occasionally. I have the satis-

faction to say that the man continues very comfortable, can retain his urine as long as persons who have no stricture, and voids it when called on without difficulty. I may remark that at no period did an instrument pass easily through his urethra; the resistance it encountered was always considerable, and it continued to pass with difficulty until it had traversed a portion of the canal of about two inches from that part at which the instrument was first obstructed; this space seemed in contact with something extremely firm and unyielding, after which it passed with considerable freedom. The difficulty of withdrawing it was always considerable, though much less than during the first part of the treatment. The time that the catheters were allowed to remain in the urethra varied: at first even half an hour produced considerable increase of irritation, whereas subsequently they were allowed to remain five or six hours with advantage. This case, abstractedly considered, would appear to be a very favourable one for the division of the stricture in the manner I have described; but when the condition of this man's health is fully considered, there are many circumstances which are prohibiting of an operation. His general health is but indifferent; his avocations deny him the advantage of rest for any lengthened period; he is very asthmatic; always breathing with difficulty, and this in cold weather is so great as to almost threaten suffocation; he is subject also

to indolent yet obstinate ulcerations of the lower extremities, and has an inguinal rupture on both sides. Under these circumstances I have told him, that as he has nothing which renders him uncomfortable in the state of his urinary organs, he had better content himself with his present condition, — with which indeed he seems perfectly satisfied. I may observe, that Mr. Whately was induced to discharge him in consequence of his viewing the case as one not admitting of further relief. There can be little doubt that this stricture is one where the urethra is for some space continuously contracted, and that the mucous membrane has undergone a considerable change of structure.

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